Chapter 17
Understanding the Port-Centric Logistics Clusters: Concepts, Characteristics, and Measurements

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ABSTRACT

Port-centric logistics clusters are considered as intermodal gateways and/or hubs of international trade, which connect national economies with global production networks. These clusters are spatial agglomeration of logistics related interconnected and interdependent companies. Singapore, Dubai and Rotterdam are world class exemplary of port-centric logistics clusters. The formation of these clusters is a derivative of conducive business environment generated within a geographically defined area. Despite the recognition of port-centric approach to economic development there is insufficient evidence to empirically assess the functional and spatial characteristics of port centric logistics clusters. There is also disagreement on three key questions: how port-centric logistics clusters are defined and identified, what industry types do they constitute and what methods are appropriate to delineate the boundary of port centric logistics cluster. In this paper, a spatial approach is adopted to geographically delineate the spatial congregation of port-centric logistics employment using three major container ports in Australia. Using the Census data from the Australian Bureau of Statistics (ABS 2006), analysis has been conducted on employment data containing information about where people work and what industry they work within the close vicinity of case study seaports. The results show that the spatial extent Australian port centric logistics clusters, which tend to vary both in size and shape. Overall size of employment in port-related industries in Australia has grown substantially. Road freight is dominating industry in the port-centric logistics cluster with a contribution of 23.02% and 37.54% in 2001 and 2006 respectively. The range of port-centric logistics cluster in Melbourne is towards western suburbs and in Botany Bay the port-

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centric logistics cluster is discerned mainly around eastern suburbs and in Brisbane the spread of port-centred logistics cluster is towards southeast inner Brisbane and Northwest Inner Brisbane suburbs. This shows the impact of land use consolidation by the State Government in their effort to boost transport and warehousing employment closer to Australian container ports. The establishment of port-centric logistics clusters, we argue, could mean the opportunities for organisations to achieve agglomeration economies, increase rivalry among organizations to promote competition, access to greater pool of customers, availability of skilled labour force, closer proximity between customers and supplier, sharing of public infrastructure and resources, increased inter-firm interactions, and knowledge spill-over.

1. INTRODUCTION

Two competing economic forces in the modern world era are 'globalization', which seems to have increased the geographic extent of economic activities, and 'localization' which brings the inter-related industries within a geographically contained area. These forces are also called centripetal and centrifugal forces, which either cluster or disperse economic activities. World trade has grown almost 27 folds, in volume terms, from 1950 to 2006 and the main reason is globalization (WTO 2007). Where globalization supresses the regional distinctiveness, the localization does exactly opposite by attracting businesses to operate within a cluster. Globalization has opened new markets to stimulate trade by removing most of the physical, political, and economical barriers between the nations so industries have the choice to co-locate their production or logistics activities in low-cost locations, which in turn help achieving economies of scale by accessing a larger market. This increased production enhances international trade, outsourcing and offshoring, which create linkages or interconnections among nations to exchange goods and services. The consequence of localized markets has increased the spatial and time distance between manufacturers and consumer. Billions tonnes of freight is traded throughout the world using various modes of transportations in which maritime transport is most preferred mode due to lower transport cost and mass transportation of freight, and better consolidation, though it takes longer transit times (Coyle et al.1996).

Australian shipping and port industry has existed some 200 years ago. Australia, being an island nation needs to consider the maritime competencies to enhance trade, which helps supporting economic growth (Maritime Work Force Development Forum 2013). In Australia almost 99% of international trade is carried by sea which is worth 74% of value (BITRE 2011-12). Investigating the maritime industry behaviour is a very important aspect as most of the trade is transported by sea and almost 1167 million tonnes of cargo moved across the Australian ports in Year 2011-12, which shows the increase of 8.4% from previous financial year with an average growth of 6.5% annually over the last 5 years. The total weight comprises of exports of 973.2 and 94.9 million tonnes of imports (BITRE 2011-12). An Australian government is putting lot of effort to support maritime industry by having more efficient regulation, better business structure and dynamic workforce (Maritime Work Force Development Forum 2013). In year 2010-11 coastal shipping in Australia contributed to around 20% of the total domestic freight which was approximately 101 billion tonnes-kilometres. There are lots of opportunities in Australian shipping not just because of considerable growth in incoming non-bulk containers but also progress in exports which is growing at a rate of 10.7% on an average, by value. This growth in imports and exports will lead the throughput to double in next 10-15 years. It is therefore vital to develop a better understanding