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## Regional division of labor from agglomeration economies' perspective: some evidence

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### Abstract

This study aims at elaborating the evolving degree of completeness of outward investment of manufacturing and its consequence from the view of regional development since the People's Republic of China opened her door to foreign direct investment. After two decades of Hong Kong's progressive manufacturing cross-border processing of labor-intensive operations performed in the proximate Guangdong province, a regional division of labor has developed by taking advantages of the agglomeration economies of the Hong Kong-Pearl River Delta region.

The analysis is conducted based on such a perspective using the 1998 data of a population of 2,441 electronics joint ventures in Guangdong. Findings suggested that firms' location (density) distribution, via exploiting the agglomeration economies, followed a pattern well explained by a simple gravity model with Hong Kong as the main core. The existing Pearl River Delta cities and the associated cluster economies have also demonstrated attraction for foreign direct investment. Firm size and age effects were also investigated. The findings confirmed the economic contributions of electronics joint ventures, the small ones in particular, to the development of Guangdong and the Hong Kong-Pearl River Delta region. Some suggestions on regional policy coordination were initiated. © 2001 Elsevier Science Inc. All rights reserved.

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## 1. Introduction

The “passive” industrial policy adopted by the Hong Kong (HK) government during the past two decades had served as a push factor for the HK manufacturing to invest in the nearby Guangdong province via cross-border operations (CBOs) in order to save costs (Tuan and Ng, 1995c). The results of which were the restructure of the HK industrial sector in production and employment (Tuan and Ng, 1995d) and industrial competitive patterns (Ng, 1995). Such heavy outward investment (foreign direct investment, FDI) of HK’s manufacturers especially of small/medium size enterprises (SMEs) was proven to be a major factor in changing the manufacturing industrial structure and technology (Ng and Tuan, 1997b). Nevertheless, trade and in particular the cross-border trade (or outward processing trade) generated by the cross-border operations, remained to be a significant factor in contributing to HK’s economic growth since the 1980s (Tuan and Ng, 1998).

At the firm level, the past two decades of the cross-bordering operations and relocation activities of HK’s manufacturing to Guangdong, particularly to the proximate region of the Pearl River Delta (PRD), have not only expanded the operational scales of the local (HK) firms, but also prolonged the life-cycle of their labor-intensive production techniques (Tuan and Ng, 1995b). Further, diffusion of outward processing activities into the Guangdong area has evolved into a continuous relocation of the middle-stream manufacturing operations to Guangdong by leaving the service components of operations to the HK plants (Tuan and Ng, 1994) to be followed by the management service operations (Ng and Tuan, 1996), and later the whole production plant (Tuan et al., 1998).

By observing the two decades of the progressive HK manufacturing cross-border processing of the labor-intensive operations being performed in the proximate Guangdong area, observed results tend to suggest an apparent phenomenon as described by the studies in urban agglomeration in generating agglomeration effects of economies and diseconomies (Krugman, 1991; Richardson, 1995). A regional division of labor of CBOs between HK and the PRD region seemingly has developed by taking advantages of the agglomeration economies<sup>1</sup> generated by the geographical agglomeration or integration of these two regions.

Agglomeration economies generated via the integration of two regions represent the economies or advantages (including externalities) being developed to appear as scale economies and lower production costs. In the case of HK, its proximate PRD region would serve as the hinterland to continue supplying cheap labor and land resources to HK’s firms. The agglomeration economies generated by the aggregate HK-PRD entity would include advantageous effects of better service facilities; industrial networkings; global marketing channels; lower transaction costs in information, financing, marketing, and transportation facilities; and so forth (Tuan and Ng, 1999).

To test the validity of the above postulation of the role of agglomeration economies in urban development, an empirical investigation using micro (firm)-level data of the manufacturing establishments in Guangdong is to be conducted. Based on the population of the *Database of Guangdong Joint Ventures* (1998)<sup>2</sup> with the electronics industry as a representation, this study analyzes the regional division of labor between HK and its peripheral area (PRD) from a perspective of agglomeration economies. The effects on urban development via agglomeration economies and diseconomies were also demonstrated in the study.

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