Industrial Restructuring Hong Kong and Its Extension to the Pearl River Delta Region , China

Industrial Restructuring in Hong Kong and Its Extension to the Pearl River Delta Region, China

Jun ONODERA*

Abstract This paper aims to understand the industrialization of postwar Hong Kong and the recent industrialization of the Pearl River Delta region, China, in terms of a spatial restructuring process of the manufacturing industry. Since the 1970s, some enterprises in Hong Kong have started to integrate production processes and organize large-scale factories. Some functions of headquarters have also been integrated within an enterprise. Total marketing strategy has been frequently managed by some large enterprises, which are invested by foreign capital as well as by local capital of Hong Kong. The large-scale factories have located themselves in new industrial districts near new towns where large amounts of land are available. Since the 1980s, this technical and managerial integration has been increasingly promoted. Factories have grown in size and have relocated in remote areas to make use of the availability of land and the cheaper labour force. The Pearl River Delta region has naturally been a favorable location for these large factories. The restructuring process has further been promoted by the surge of foreign investment and by the expansion of Asian markets in the context of New International Division of Labour.

Key words: international division of labour, industrial vertical integration, Hong Kong, the Pearl River Delta region, China

1 Introduction

The manufacturing industry has played a significant role in promoting the economic development of Asia's Newly Industrializing Economies (NIES): South Korea, Taiwan, Singapore, and Hong Kong. These economies have channeled their hard-working labour force into the labour-intensive industrial sector and introduced high technology from developed countries. Manufacturing enterprises in these economies have been importing raw materials from overseas, processing and assembling these materials, and exporting the finished products. In this way, the manufacturing industries of Asia's NIES have strengthened their competitive power in the world market

* Institute of Geography; Tohoku University, Sendai 980-8578, Japan
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via the relatively low prices of their export commodities.

Along with the growth of these manufacturing industries internationally, their significance has also increased domestically, greatly influencing the spatial configuration of each economy. For example, many factories have been constructed around good harbours which has led to the formation of large industrial complexes. These complexes have absorbed a large amount of the labour force not only locally but also from peripheral rural areas. The growth of these industrial complexes has attracted more capital and thus more labour, which has led to the urban formation in the area as a whole.

This paper aims to understand the industrialization of postwar Hong Kong and the recent industrialization of the Pearl River Delta (PRD) region, China, in terms of a spatial restructuring process of the manufacturing industry. To start with, this paper refers to the ideas of "international division of labour" and "industrial vertical integration" as a theoretical framework for the following analyses. Next, the industrial restructuring that has occurred in Hong Kong is explained as a gradual changeover from vertical disintegration to vertical integration. Recent trends in the post-industrialization of Hong Kong are also mentioned. Then, the introduction of foreign capital from Hong Kong to the PRD region and industrialization in the PRD region are explained as a process of spatial expansion of Hong Kong's manufacturing industry as a result of deepening vertical integration.

Hong Kong and the PRD region have been governed by different authorities for a long period of time since the Opium War. Even after the return of Hong Kong's sovereignty from Britain to China in 1997, distinct political systems seem to continue to exist in Hong Kong and the PRD region. Nevertheless, economic and social interactions have increased since the 1980s. Both Hong Kong and the PRD region have utilized the different conditions existing in each other's economies so as to strengthen their own economy.

At the same time, along with the penetration of the market economy into the Chinese mainland, some economic phenomena have extended beyond the border between Hong Kong and China. In this sense, Hong Kong and the PRD region could be regarded as *a spatial continuity*. The industrialization that has been occurring recently in the two areas is by no means an exceptional case of such economic phenomena.

2 Spatial implications of industrial restructuring

2.1. New International Division of Labour

The traditional international division of labour existed in the trade between developed and underdeveloped countries or regions, in which the former specialized in

manufactured goods and the latter specialized in agricultural produce or natural resources. This kind of division of labour was quite rational from the viewpoint of "comparative advantage". In its early stage, the minerals and agricultural produce were extracted from underdeveloped regions by means of the forcible application of human labour power, in the form of slavery, to production (Henderson, 1989, 16). During the nineteenth and early twentieth centuries, the trade in industrial and primary commodities was reinforced through the imperial relationship between suzerain states and their colonies. Even after the declaration of independence by many former colonies, the trading relations remained asymmetrical. It was very difficult for underdeveloped regions to modify in a short period economic structures that had been formed over centuries. The prices of primary commodities fluctuated so severely due to excessive competition as well as due to natural conditions that these regions had little chance to accumulate capital for further development. As a result, the terms of trade tended to become unfavorable to underdeveloped countries, which promote the transfer of surplus value from underdeveloped to developed countries. Surplus value was accumulated in developed countries and fostered economic disparity between North and South.

In the 1970s, nationalism over resources became clamorous. The establishment of a New International Economic Order (NIEO) as advocated by the United Nations was a political attempt to alleviate the economic disparity between North and South. The NIEO recommended permanent sovereignty over resources for developing countries, price support for primary commodities, and the promotion of producers' cartels. In connection with this last policy, China was unable to adopt a positive attitude to NIEO. China adopted a policy of "*zili gengsheng*" (self-reliance) policy and involved itself only to a limited degree in the international division of labour.

At that time, another type of international division of labour emerged. The New International Division of Labour (NIDL) implies that industrial production is organized by transnational corporations (TNCs) across political boundaries at a global level. An increase of foreign direct investment in the manufacturing sector of the Third World or "peripheral" societies is typical of NIDL (Henderson, 1989 ; Frobel *et al.*, 1980 ; Taylor and Thrift, 1982 ; Forbes and Thrift, 1987 ; Gordon, 1995).

The production processes of TNCs are subdivided into fragments which can be assigned to whichever part of the world can provide the most profitable combination of capital and labour (Fröbel *et al.*, 1980, 14). Because the appropriate operation size of each process differs due to the level of technology, the required combination of capital and labour also differ. It is probable that TNCs would rather separate their production processes into several fragments and locate each of them at suitable sites around the world than integrate all processes and locate at one site on a large scale.

However, in response to changes in technology and the market, TNCs may

integrate the major part of their production processes and set up a few large-scale factories. If new production technology allows the integration of a series of processes, economies of scale may offer a greater benefit than does a multi-locational strategy. Alternatively, when markets expand, it is easy for TNCs to promote mass production and enlarge factories. In this case, spatial division of labour would not take place in terms of production. Thus, the strategies employed by TNCs in locating their production processes depend on technology and market conditions.

TNCs consist of not only production function but also of functions such as supervision of management, marketing, fund management, and Research and Development (R & D). These functions, except production, are usually integrated in a headquarters (H.Q.). Since a H.Q. needs to maintain a certain degree of accessibility in order to enable face-to-face contact with business partners, finance institutions and government authorities, and to collect information to be used in planning, it is natural for it to locate itself in a large city. The agglomeration of the H.Q. of many companies in a city will attract the H.Q. of other companies and transforms the city into a world business centre.

While H.Q. tend to locate in cities, factories engaging in production do not necessarily do so. Particularly when TNCs are planning mass production, they prefer to establish factories in rural areas. Large factories require large areas of cheap land for their sites. They can employ a large number of unskilled workers from the rural labour market at low wages. As a result, a spatial division of labour occurs between H.Q. in urban areas and factories in rural areas. Recently, some R & D functions have been detached from H.Q. and moved to suburban areas.

What is worthy of note here is that this kind of spatial division of labour does not have to be limited within a single country. TNCs look for the most favourable location for each function regardless of borders. The exchange of goods, information, and people between corporate functions has been supported of late by the rapid development of transportation and communication technologies.

2.2. Vertical integration of the manufacturing industry

Let us consider the locational strategy of the manufacturing industry in terms of spatial theory. The internal structure of manufacturing enterprises was investigated by Massey (1984) in terms of spatial division of labour. The managerial hierarchy is classified into two parts: H.Q. and branch plants. The former has full control over overall investment and accumulation processes as well as over means of production and labour force, whereas the latter has only partial control. The production hierarchy consists of three parts: R & D, craft work, and assembly, which form the technical division of labour. Massey then presented three types of spatial structures: 1. Concentrated, 2. Cloning, and 3. Part-process. These types differ according to the

degree of differentiation of managerial and production hierarchies. Massey added that there were tendencies in the development of capitalist economies for the size of individual companies to increase, and for multi-plant, multiregional and multinational companies to become more common; that is, for a progression from type 1 to type 2 and type 3. This model is extremely valuable estimated for its analytical explanation of intra-firm as well as inter-firm spatial structuring. It is necessary to consider simultaneously both the managerial hierarchy within an enterprise and the technical division of labour among enterprises.

Scott (1988) gave particular consideration to the unification of social division of labour and spatial structure. The ideas of "vertical disintegration" and "vertical integration" were introduced. Labour processes are vertically disintegrated when internal transaction costs exceed external transaction costs.

> On the one hand, where linkages are small in scale, unstandardized, unstable, and in need of personal intermediation, they will usually be associated with high distance-dependent costs per unit of flow. As a result, we may expect to find that small plants with variable production activities (hence with small-scale and problematical input-output relations) will tend to locate near their main linkage partners (Scott, 1988, 51).

Labour processes are vertically integrated when the internalization of the transaction costs associated with different labor processes results in significant cost savings.

> On the other hand, where linkages are large in scale, standardized, stable and easily manageable, they will tend to incur relatively low transactions costs per unit of flow. This implies that large plants with routinized and evenly regulated input-out-put relations will be correspondingly more free to detach themselves from their linkage patterns and to locate at greater distances from them (Scott, 1988, 51).

Which process appears in practice depends upon the level of production technology, market demand, and other historical conditions. These conditions are not decided uniformly in accordance with the stage of economic development. Scott and Massey differed in their views on this point. The range of spatial competition is technologically defined at the same time as the appropriate technology depends upon the scale of the market area for both inputs and outputs (Harvey, 1985; Mizuoka, 1996).

The recent locational strategy of TNCs involved in manufacturing in Asia seem to be more suitable to the process of vertical integration. The TNCs tend to set up large plants for mass production cross-border from their H.Q. Vertical integration theory can be applied to the analysis of the spatial dynamics of industrialization in the Hong Kong-PRD region.

3 Industrial restructuring in Hong Kong

3.1. Vicissitudes of Hong Kong's manufacturing industry

Let us start with a historical overview of Hong Kong's manufacturing industry. Before examining the industrial restructuring that occurred in the 1980s and early 1990s in Hong Kong in spatial terms, it is first necessary to understand background to that restructuring. The manufacturing industry in Hong Kong has been characterized by an occasional change in the type of commodity being produced. The managers of small factories have been quite sensitive to the demands of the international market, and since they seldom invest heavily in plant and equipment, the production lines in these small factories can be easily altered.

Hong Kong had occupied the role of entrepot since the mid-nineteenth century, when Britain acquired its sovereignty. It served as a gateway to China for British and other developed nations' exports. At the same time, a large number of Chinese emigrants passed through Hong Kong on their way overseas. With the increasing settlement of Chinese, a highly organized financial network began to develop in Hong Kong and Southeast Asia (Hamashita, 1996). A large amount of money was remitted from overseas to China through this Hong Kong-based financial network. Thus, from its earliest period, Hong Kong had already become a point of connection between China and the rest of the world, especially Southeast Asia, not only in terms of trade but also in terms of finance and the movement of people. However, Hong Kong's manufacturing industries maintained only local importance before the Second World War (HKGID, 1996).

After the Japanese occupation from 1941 to 1945, Hong Kong was expected to resume its role as an entrepot. However, Civil war broke out in China soon, disturbing the smooth recovery of Hong Kong's trading activities. Although the Korean War from 1950 to 1953, which followed closely the foundation of the People's Republic of China in 1949, brought a special procurement boom to Hong Kong at first, the final result was harmful to Hong Kong. The trade embargo by United Nations against China, which was initiated by the United States, finally eliminated the possibility of Hong Kong resuming its role as an entrepôt. Having lost access to the Chinese hinterland, the Hong Kong authority had to find another method of economic development in order to maintain the colony: it decided upon export-led industrialization.

During the confusion caused by Chinese revolution, many textile industrialists took the opportunity to escape from Shanghai to Hong Kong, taking with them capital, equipment and technology (Henderson, 1991). A large number of skilled workers also moved. The need by industry for large labour force was satisfied by the inflow of refugees from the mainland. These factors provided the stimulus to Hong Kong's industrial development. In addition, because of the reduction in trade finance due to

the United Nations trade sanctions, banks in Hong Kong had ample capital to furnish funds to manufacturing industries. An increasing global demand for apparel in the 1950s and the preferential tariffs of the Commonwealth of Nations also boosted Hong Kong's textile industry (Sugitani, 1989). Cotton textiles and garments thus became the major industry in Hong Kong during the 1950s and 1960s.

The plastics industry, including wigs, toys, and artificial flowers, sprang up in the late 1950s. These products were generally short-cycle commodities. Because Hong Kong enterprises had great flexibility in terms of management, they were able to cope with the ups and downs in the global demand for commodities.

The electronic industry has developed since the early 1960s (Henderson, 1991 ; Sugitani, 1989). It began with the production of radio in the late 1950s, before turning to the manufacture of audio and computer parts in the late 1960s. The focus of production of the electronics industry has changed frequently ; for example, memory chips, pocket calculators, integrated circuits, and semiconductors appeared one after another in the 1970s.

Along with textile and electronics, which both continue to be key industries, the watch industry has also become important since the latter half of the 1970s, whereas. Hong Kong was well known in the prewar days as a trading centre of watches, and since the 1970s foreign enterprises, especially from Japan, have started the assembly of the external ornaments of watches in Hong Kong. However, most of watch mechanisms, which need a high level of craftsmanship to assemble, continued to be imported. Many small- and medium- scale enterprises spun off from foreign enterprises both before and after 1980. (Sawada, 1989).

Fig. 1 shows the changing percentages of persons engaged in selected manufacturing industries since 1975. "Clothing (37.9% in 1975, 29.0% in 1995)", "Textiles (12.5%, 7.3%)", "Plastics (9.4%, 4.1%)" and "Toy (5.5%, 1.5%)" witnessed a considerable decline during twenty years, had supported the growth of Hong Kong's manufacturing industry in the 1950s, 1960s and 1970s. These labour-intensive industries have declined due to Hong Kong's soaring labour costs. Meanwhile, the growing demand for production-line machinery has made a large contribution to the sharp increase in the number of workers engaged in "Industrial machinery (1.3%, 5.0%)". A large number of industrial machines have also been exported to mainland China as well as to ASEAN to meet the expanding production activities of those nations. "Electronics (7.9%, 11.4%)" has been a growth industry since the 1980s not only in Hong Kong but also in the PRD region (see Table 3). "Printing (2.9%, 11.6%) and "Food & beverage (2.5%, 5.5%)" have also witnessed marked growth due to the increase in local demand from urbanized Hong Kong.

During the 1980s, Chinese economic reform and open policy led Hong Kong manufacturers to move their production bases to the PRD region. This structural

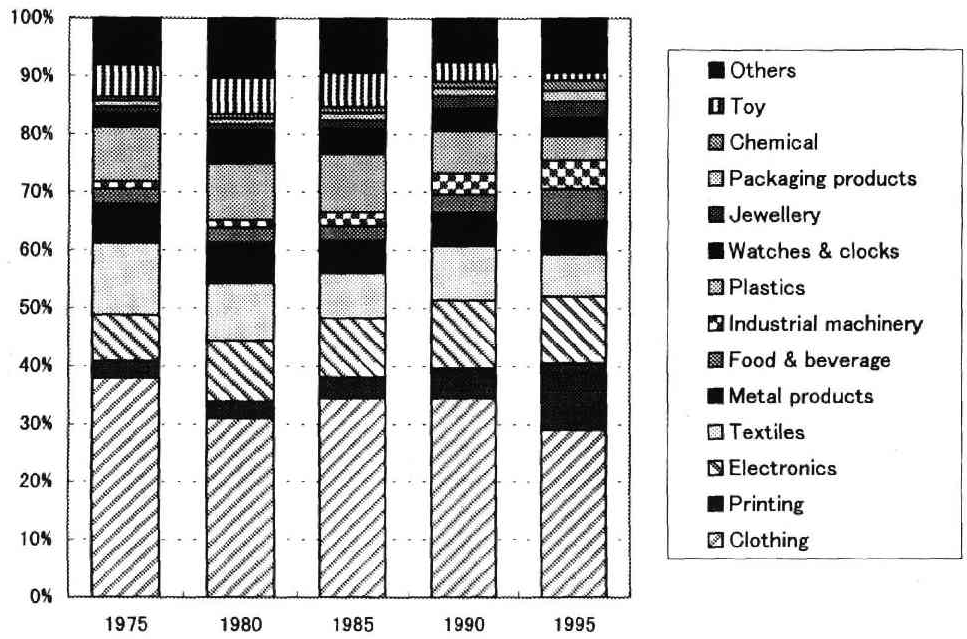


Fig. 1 Percentage of persons engaged in selected manufacturing industries in Hong Kong, 1975-1995
Source: Reports of Employment, Vacancies and Payroll Statistics, Census & Statistics Department, Hong Kong.

transition provoked post-industrialization in the territory. One reason for this shift of production from Hong Kong to the PRD region was the accelerated rise in wages brought about by Hong Kong government restrictions on immigration into the territory in the 1980s, which was also one of the reasons for the move of production function. Drastic cost-cutting by Hong Kong's ASEAN competitors was another reason. Variations in Hong Kong's manufacturing industry in terms of the number of establishments and persons engaged as well as in terms of the value of gross output are shown in Figs. 2 and 3. The number of persons engaged in the manufacturing sector peaked in the early 1980s, while the number of establishments peaked some years later. The total value of gross output continued to rise until it reached more than HK$ 300 million at the end of the 1980s.

The process of post-industrialization in Hong Kong is more easily understood by examining the economic structure of the territory as a whole. "Wholesale, retail and import/export trades, restaurants and hotels" industry took over first place in terms of persons engaged from "Manufacturing (892 thousand in 1980, 386 thousand in 1995)" industry in the late 1980s (Fig. 4). A comparison of employee numbers by occupation also clearly shows this trend, although comparable figures in recent years are missing

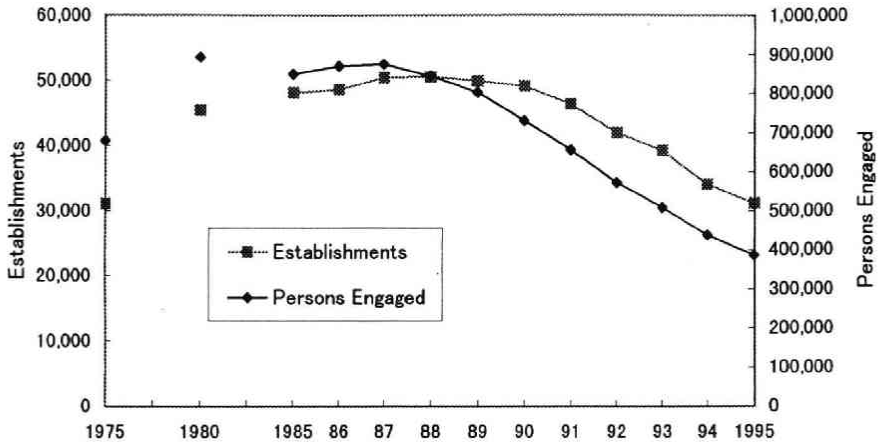


Fig. 2 Establishments and persons engaged in Hong Kong's manufacturing industries, 1975-1995
Source: Reports of Employment, Vacancies and Payroll Statistics, Census & Statistics Department, Hong Kong.

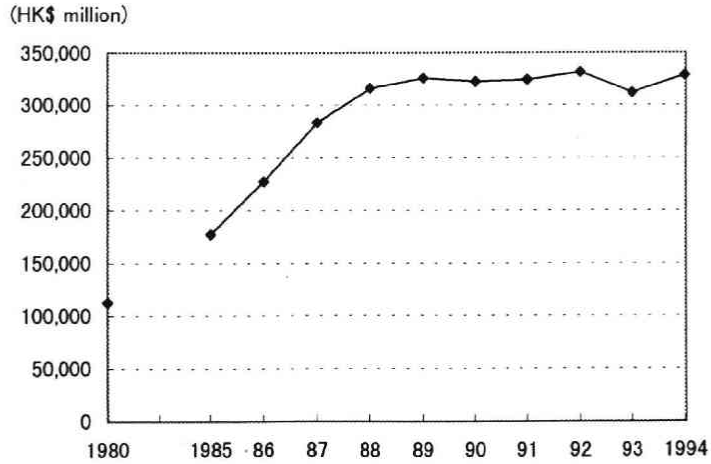


Fig. 3 Gross output of Hong Kong's manufacturing industries, 1980-1994
Source: Hong Kong Social and Economic Trends 1980-1990, Hong Kong Social and Economic Trends 1995 Edition, and Hong Kong Annual Digest of Statistics 1996 Edition.

owing to a major alteration in classification in 1992 (Fig. 5). While the percentage of "Production and related workers", namely, blue-collar workers, decreased through the 1980s (52.3% in 1971, 36.2% in 1991), the percentage of white-collar workers, such as "Professional, technical and related workers", "Administrative and managerial workers" and "Clercial and related workers" increased steadily.

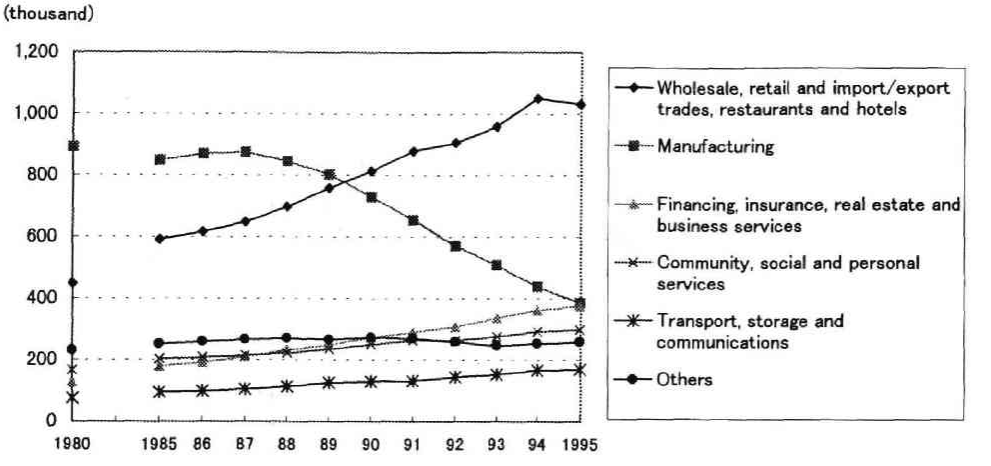


Fig. 4 Persons engaged by major economic sectors in Hong Kong, 1980-1995
Source: Reports of Employment, Vacancies and Payroll Statistics, Census & Statistics Department, Hong Kong.

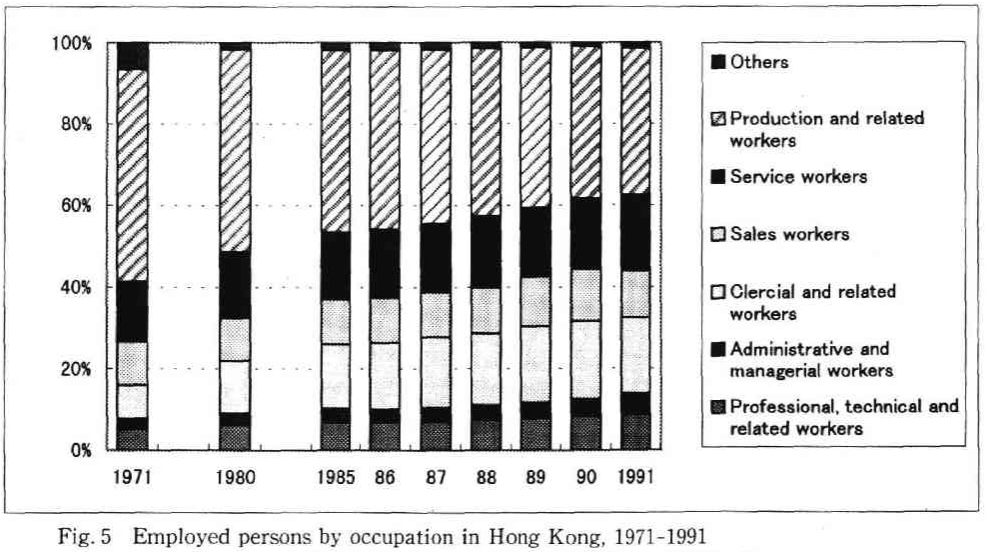


Fig. 5 Employed persons by occupation in Hong Kong, 1971-1991
Source: Census and Statistics Department, Hong Kong (1991): Hong Kong Social and Economic Trends 1980-1990 and Census and Statistics Department, Hong Kong (1993): Hong Kong: 25 Years' Development.

Post-industrialization has forced those manufacturing industries that remain in Hong Kong to change their management policy. Previously, most companies were engaged in manufacture of labour-intensive commodities, but recently some have

turned to the production of more fashionable, multi-functional, and high value-added commodities. For example, the textiles and clothing industries have recently devoted themselves to the production of high-quality fabrics and high-fashion apparel, and there has been a similar shift from imitation jewelry to the use of precious metals in the jewelry industry. The electronics industry in Hong Kong has moved the assembly lines of relatively simple commodities to the PRD region, and has lately been engaged in the production of a wide variety of sophisticated products and components such as palmtop computers, video compact disk (VCD) players, and multi-layer and high-density fine-pitch printed circuit boards (HKGID, 1996).

The Hong Kong economy broke away from the traditional style of entrepot trade and developed export-led manufacturing industry after the Second World War. This manufacturing industry developed for more than thirty years, often changing the type of commodities produced to meet the demands of global market. However, as factories have been relocated to the PRD region, the importance of the manufacturing industry to Hong Kong has decreased in recent years. Thus, the structure of Hong Kong's economy as a whole has changed drastically since the 1980s, shifting from manufacture-oriented industry to service-oriented industry.

3.2. Characteristics of Hong Kong's manufacturers

As stated above, Hong Kong's manufacturing industry had peaked by the 1980s. Although it often changed its production to meet the demands of the overseas markets, it remained labour-intensive and export-led in character. Through these vicissitudes, what were the characteristics of the individual manufacturers and how did they respond in terms of business management? A close look at Hong Kong manufacturers will clarify their fundamental characteristics before the recent restructuring.

Table 1 shows the number of establishments by the number of employees in 1967 and every five years since 1975. The percentage of establishments employing from 1 to 19 persons has risen from 65.2% in 1967 to 88.5% in 1995. On the other hand, the number of establishments employing 20 or more persons fell by 23.3% over the nearly thirty years that included a golden age of Hong Kong's manufacturing industry. The average scale of establishments declined continuously during this period. In general, it can be said that the large-scale businesses are foreign-owned and the small- and medium-scale factories are local; at least a half of the foreign-owned establishments employ more than 500 persons (Eng, 1997).

Small-scale enterprises prefer to rely on family members and part-time workers rather than to employ full-time workers. In this way, it is possible for the enterprises to minimize their legal responsibilities (England, 1989) and to vary the number of employees as their orders vary. Even the managers of these enterprises are said to sometimes have other jobs. It was reported that some enterprises had contractual

Table 1 Number of manufacturing establishments in Hong Kong by employee numbers, 1975-1995

(%)

No. of Persons Engaged	1967		1975		1980		1985		1990		1995	
1-9	6,161	(65.2)	20,254	(65.3)	29,747	(65.5)	32,827	(68.3)	35,915	(73.2)	24,068	(77.4)
10-19			4,639	(14.9)	6,970	(15.3)	6,760	(14.1)	6,366	(13.0)	3,466	(11.1)
20-49	1,669	(17.7)	3,438	(11.1)	5,119	(11.3)	5,040	(10.5)	4,219	(8.6)	2,287	(7.4)
50-99	765	(8.1)	1,486	(4.8)	2,111	(4.6)	2,016	(4.2)	1,520	(3.1)	771	(2.5)
100-199	438	(4.6)	733	(2.4)	895	(2.0)	904	(1.9)	668	(1.4)	330	(1.1)
200-499	310	(3.3)	356	(1.1)	410	(0.9)	393	(0.8)	302	(0.6)	140	(0.4)
500-999	68	(0.7)	88	(0.3)	117	(0.3)	99	(0.2)	77	(0.2)	39	(0.1)
1,000 and above	43	(0.5)	40	(0.1)	40	(0.1)	26	(0.1)	20	(0.0)	13	(0.0)
Total	9,454	(100.0)	31,034	(100.0)	45,409	(100.0)	48,065	(100.0)	49,087	(100.0)	31,114	(100.0)

Source: Reports of Employment, Vacancies and Payroll Statistics, Census & Statistics Department, Hong Kong and Commission of Labour, Hong Kong (1967) : Annual Departmental Register

arrangements with mobile groups of skilled workers, known as ambulatory worker groups (Sit and Ng, 1981). These groups were contracted to perform specific jobs within the contractor's own factory and using its equipment and space (Sit and Wong, 1989). This nonreliance on a full-time labour force allows the enterprises great flexibility in their response to business fluctuations and enables them to cut down on costs (Taniura, 1989).

The use of a subcontracting system is another important characteristic of Hong Kong's manufacturing industry. The predominant form of subcontracting in Hong Kong can be categorized as "capacity subcontracting", which consists of the farming out of overflow work that could technically be done in house except for a current excess of orders relative to installed operating capacity (Scott, 1983); it is not a form of "specialization subcontracting" in which the parent firm and the subcontractor are engaged in different but complementary production (Holms, 1986). Enterprises engaged in this system of subcontracting must agglomerate in a relatively small area, because they have to quickly pass parts of orders to their subcontractors or cooperative factories to meet tight delivery schedules when they have a backlog of orders received (Sit and Wong, 1989). This agglomeration also allows these enterprises easy access to market information and to new production technology, and they are able to utilize regional labour markets of skilled workers.

This agglomeration of small-scale enterprises also consists of trading houses, or import-export firms. The trading houses solicit orders from overseas buyers and act as marketing agents to the large number of small- and medium-scale manufacturers (Sit and Wong, 1989). Sometimes these trading houses even handle the arrangements for loans and the purchase of machinery (Sit, 1982). Although the relationships between individual firms are not fixed, both production and marketing are carried out within a synergistic network that includes the subcontracting system.

3.3. Spatial restructuring of Hong Kong's manufacturing industry

In this section, the conditions of the spatial restructuring of Hong Kong's manufacturing industry are examined using statistical data. Special attention is paid to the variations in size and distribution of establishments in the territory and to the overall trend of the industry toward vertical integration in the 1970s, 1980s and early 1990s.

Fig. 7 shows the transitions in the manufacturing industry from 1973 to1993 in eleven divisions (Fig. 6), which together cover the whole area of Hong Kong. The three lines indicate the variations in the number of establishments, the number of persons engaged, and the gross output of each division as a percentage of the whole territory.

Divisions 1 (Central, Sheung Wan, Island West, Mid-Levels, and Aberdeen) and 2 (Wan Chai and Tai Hang) are on Hong Kong Island and include some industrial

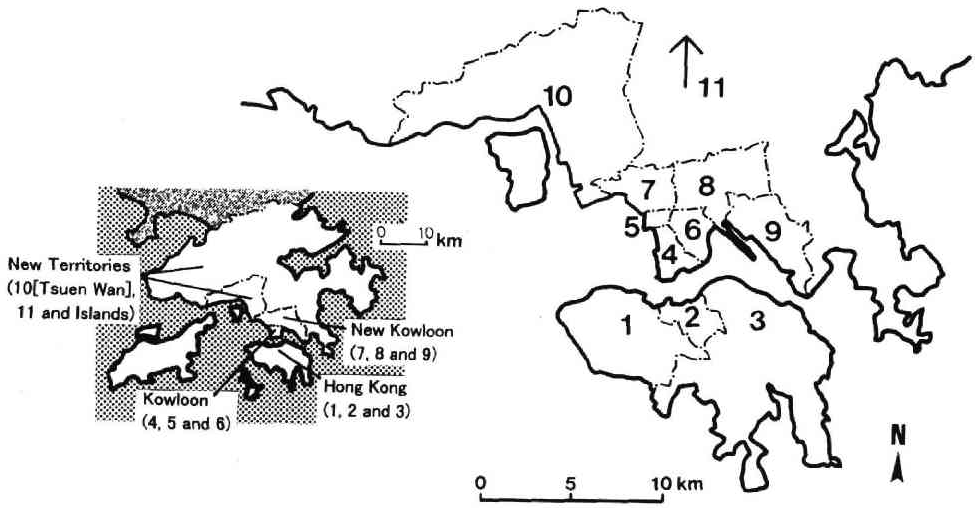
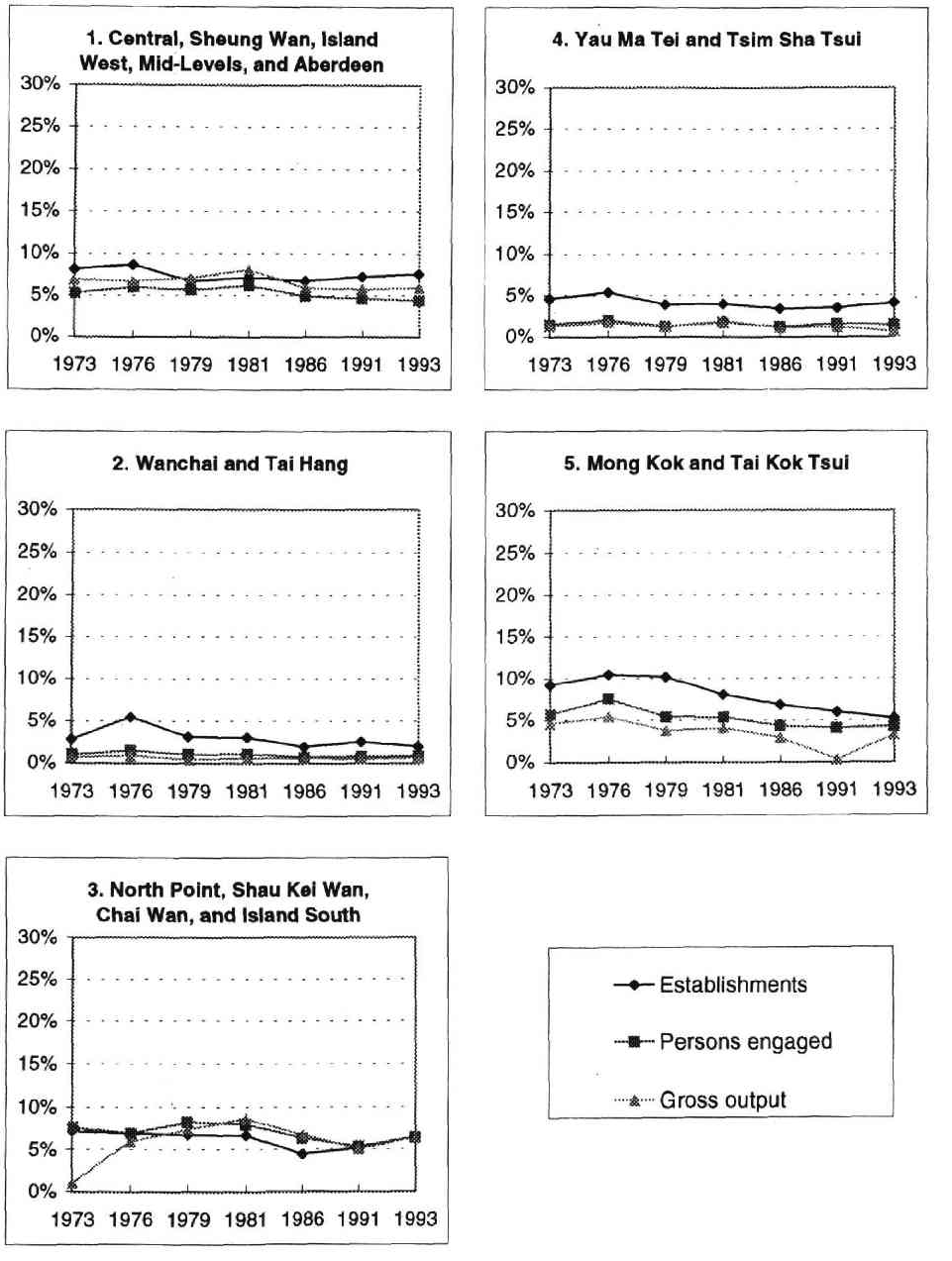


Fig. 6 Divisions of industrial districts in Hong Kong

districts. They demonstrate no marked fluctuations over the twenty years for which data is shown. That the percentage of "establishments" is higher than that of "persons engaged" means that these divisions housed many small-scale manufacturers. As these establishments are located close to the central business district, their rents are quite expensive. Thus, these enterprises have been forced to make effective use of space. Division 4 (Yau Ma Tei and Tsim Sha Tsui), which is regarded as the central business district of Kowloon side, demonstrated similar features.

In Division 5 (Mong Kok and Tai Kok Tsui) and Division 7 (Lai Chi Kok, Cheung Sha Wan, and Shek Kip Mei), the percentages of "establishments", "persons engaged" and "gross output" all peaked in the middle of 1970s before steadily declining through to 1993. A comparison of the percentages of "establishments" and "persons engaged" indicates that a lot of small-scale enterprises agglomerated within these divisions. These two small, adjacent divisions are widely known to be the centre of Hong Kong's traditional industries. In the past, these divisions housed a considerable number of cottage industries, and they still contain many buildings that house a variety of factories, shops, offices, and even residences all together. "Gross output" has always been low in those divisions in comparison with the number of "establishments" and "persons engaged", indicating that productivity in these divisions is lower than average.

Divisions 3 (North Point, Shau Kei Wan, Chai Wan, and Island South) and 6 (Hung Hom, Tokwawan, and Ho Man Tin) are both situated near traditional industrial districts on Hong Kong Island and Kowloon, respectively, and the other is that the size


1. Central, Sheung Wan, Island West, Mid-Levels, and Aberdeen
2. Wanchai and Tai Hang
3. North Point, Shau Kei Wan, Chai Wan, and Island South
4. Yau Ma Tei and Tsim Sha Tsui
5. Mong Kok and Tai Kok Tsui
30%
25%
20%
15%
10%
5%
0%
1973 1976 1979 1981 1986 1991 1993
Establishments
Persons engaged
Gross output

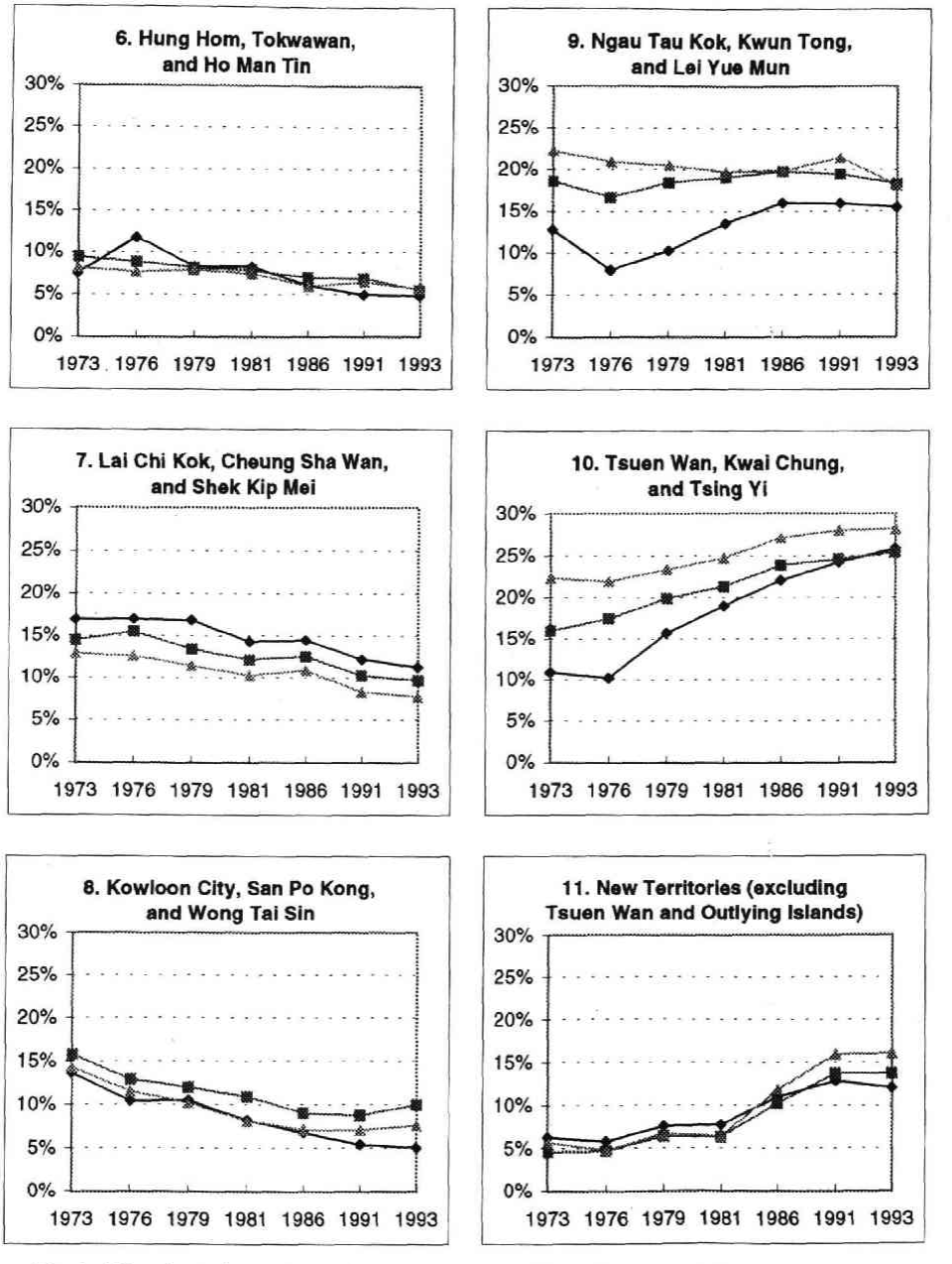


Fig. 7 Manufacturing industry in each division of Hong Kong, 1973-1993
Source : Industrial Production Statistics Section, Census and Statistics Department.
See Figure 3.6. as boundary maps of the divisions.
Y-axis indicates a percentage of the whole territory.

of establishments of both was almost the average of Hong Kong. Division 6, however, showed a slight downward tendency in all three variables.

Division 8 (Kowloon City, San Po Kong, and Wong Tai Sin) is situated slightly to the east of the traditional industrial districts in Kowloon. Except for occasional slight increases in "persons engaged" and "gross output" from 1991 to 1993, all three variables continued to decrease steadily. The percentage of "establishments" was lower than that of "persons engaged" throughout, and, moreover, the gap between these variables has widened. This means that the average size of the establishments in this division was larger than the territory's average and that the establishments have tended to grow in size. The recent clearance of squatters and redevelopment in this division may have had an influence upon these trends.

Division 9 (Ngau Tau Kok, Kwun Tong, and Lei Yue Mun) is in New Kowloon and is now known as one of the major industrial districts in Hong Kong. Government reclamation work started in 1953 enabled the development of large-scale industrial districts in this division (Wigglesworth, 1971 ; Dwyer, 1975). During the twenty years from 1973 to 1993, the level of "gross output" and "persons engaged" remained relatively stable at around 20% of the Hong Kong total. The percentage of "establishments", however, first fell from 13% in 1973 to 8% in 1976 before increasing to 16% in 1986. It has remained at that level since. A boom in spin off in the 1970s led to the number of establishments increasing 3.75-fold in the three years from 1973 to 1976. Because those small- and medium-scale manufacturers tended to locate in traditional industrial districts, the relative percentages of establishments in the new industrial districts, such as Divisions 9 and 10, were apt to decline suddenly. In fact, the absolute number of establishments in these divisions increased constantly throughout that period. The size of the establishments had always tended to be large.

Division 10 (Tsuen Wan, Kwai Chung, and Tsing Yi) has developed into the largest industrial district in Hong Kong. Some manufacturers left the congested urban areas of Kowloon and settled in the Tsuen Wan area in the 1950s, yet its real development as new town started in the 1970s when a bay was reclaimed for housing and industrial development ; large agricultural areas were converted to urban uses along a trunk road (Leung, 1980).

The percentage of "gross output" rose from 22% in 1973 to 28% in 1991 and 1993. The relative percentage of "persons engaged" rose steadily from 16% in 1973 to 25% in 1993. Although there was a slight decrease in 1976, the percentage of "establishments" rose sharply from 10% in 1976 to 26% in 1993. The absolute number of establishments constantly increased over the twenty years, just as in Division 9. The high relative percentage of "gross output" in comparison with the other two variables indicates the high productivity of this division.

In the 1970s, this division demonstrated a much higher relative percentage of

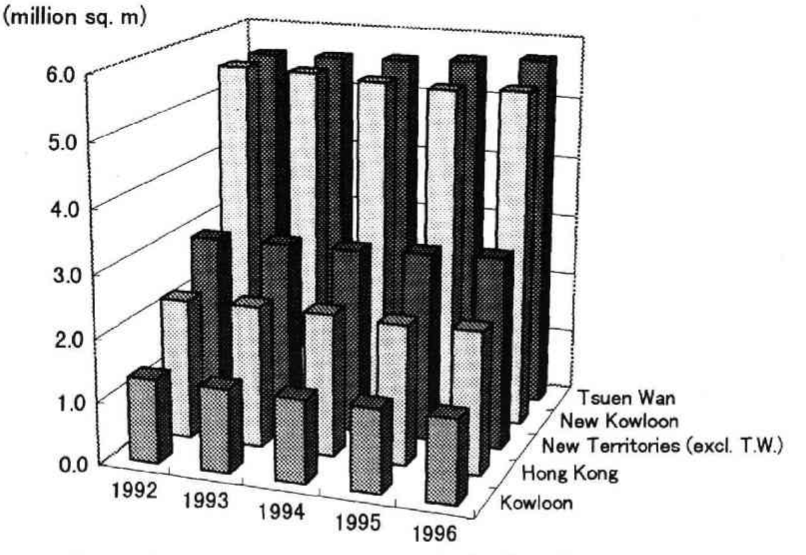


Fig. 8 Stock of private flatted factories in Hong Kong, 1992-1996
Source: Hong Kong Property Review 1997.

"persons engaged" than that of "establishments". However, during the 1980s the percentage of "establishments" rose sharply and the difference between the two variables gradually diminished. The relative percentages of these two variables were nearly the same at the beginning of 1990s, with the percentage of "persons engaged" only slightly higher, but this had become reversed by 1993. This indicates that a number of relatively large-scale establishments located themselves in this division during the 1970s, and that a number of small establishments have also sprung up or that the larger ones moved out of this division. In terms of establishment scale, the characteristics of this division have gradually changed until they have become similar to those in the outskirts of traditional industrial districts.

Division 11 consists of several districts in the New Territories, such as ShaTin, Tai Po, Tuen Mun, Yuen Long, and so forth, but not Tsuen Wan and outlying islands. It was expected that the availability of cheap land in this division would attract various industries (Wigglesworth, 1971). The relative percentages of each variable remained at about 5% until the early 1980s, when they all started to increase. The scale of the establishments in this division was smaller than the average during the 1970s, but became larger than the average in the 1990s. This division's share of "gross output" continued to be about 16% in 1991 and 1993.

In summary, between 1973 and 1993 the traditional industrial districts, in which small- and medium-scale establishments tended to agglomerate, reduced the percentages of the three variables, while the new industrial districts, in which relatively large-

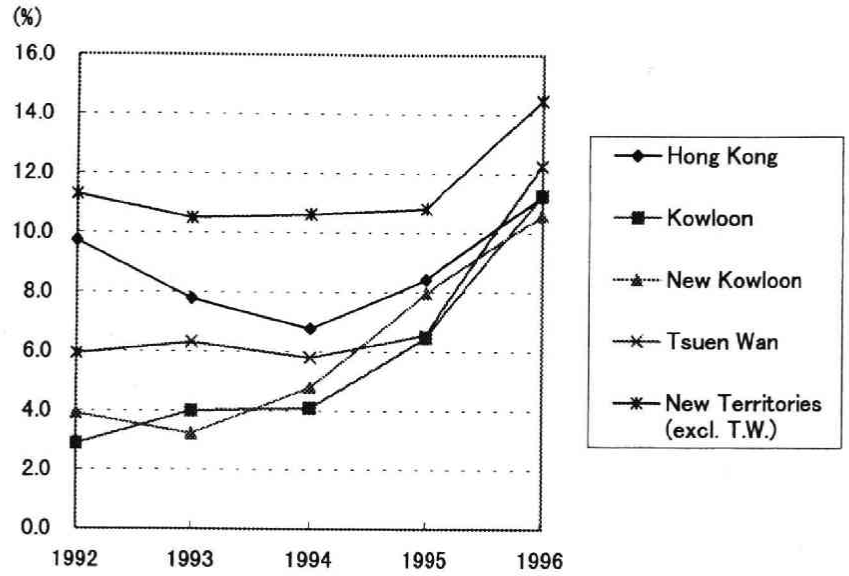


Fig. 9 Percentage of vacancy of private flatted factories in Hong Kong, 1992-1996
Source: Hong Kong Property Review 1997.

scale establishments tended to be located, increased their shares. This result is in accord with some studies that have reported the decentralization of manufacturing activities from the main urban areas to the New Territories (Sit, 1979; Pun 1984; Yeh, 1985, 1987).

The advanced stage of spatial restructuring in Hong Kong is suggested by the data shown in Figs. 8 and 9. Fig. 8 shows the volume of factory floor space in five areas of Hong Kong from 1992 to 1996. It is apparent that there has been little change in volume in recent years. Fig. 9, however, shows the rapid rise in vacancy rate of factory space since 1994, which suggests that built-environment could not adapt itself to the process of post-industrialization. The rise is more apparent in Kowloon and New Kowloon where small- and medium-scale establishments have long been located.

3.4. Government's countermeasures for restructuring

The industrial restructuring that has occurred since the 1970s has resulted in a general move toward large-scale production and toward the production of higher value-added commodities. At the same time, Hong Kong has been confronted with the crisis of deindustrialization. The Hong Kong Government put in force many new policies in order to preserve manufacturing activities in the territory.

The development of new towns in Hong Kong has been closely related to industrial policies. Hong Kong started to develop the new towns in the 1970s. In appearance,

the planning policy behind Hong Kong's new towns is similar to that of Britain's garden cities; the new town are each surrounded by a green belt; they are limited in scale; they are arranged so that places of work are close to housing in order to increase their self-sufficiency; and the land is publicly owned. Housing Authority of Hong Kong was established in 1973 under the Housing Ordinance. It is an official organization responsible for public housing and has aggressively supplied housing to support the development of the new towns. According to 1995 statistical data, 3,068,300 out of the territories total population of 6,140,700 were accommodated in public housing (Howlett, 1996).

The Hong Kong government pushed on with the development of new towns, partly to relieve the overcrowding in the old urbanized areas and to improve the living environment, but mainly to provide the necessary labour force for industry in the New Territories. It was expected that residents of the planned public housing would create a low-income working class community (Sit, 1980; Yeh, 1985). The provision of housing at far below market prices would in effect act as a wage subsidy (Henderson, 1991). Because land rents in the New Territories were lower than those in the urban areas of Kowloon and Hong Kong Island, public housing could be built more cheaply and offered to workers at lower prices in these new towns. Overall, the development of new towns as housing estates has progressed smoothly. As the much cheaper rents and better living environment in these "estates" appealed to Hong Kong people, many of them moved from old congested areas to these suburban new towns "quasi-voluntarily" (Yeh, 1985).

In addition to providing a sufficient labour force, the Hong Kong government planned to provide spacious lands at a low price for manufacturing enterprises. In fact, the Hong Kong government was quite eager to construct industrial districts near the residential areas of new towns. Because developable land is in short supply in the small territory of Hong Kong, one purpose behind the construction of the new towns was the provision of serviced land for the fast-expanding economic sectors (Sit, 1980). The government induced industry to move into the new towns by providing large tracts of cheap land for factory sites (Lee, 1980). A special organization for the financing of these developments was set up, and provided industrial land at 7 to 10% reduced prices (Kojima, 1989).

The government established the Hong Kong Industrial Estates Corporation (HKIEC) in 1977 for the purpose of developing and managing industrial estates in Hong Kong. The estates provide land- and capital-intensive factories that cannot be housed in multi-story industrial buildings with land serviced with roads, drains, sewers, electricity, and water. Three estates have been built by HKIEC in Tai Po, Yuen Long, and Tseung Kwan O, all of which are situated near new towns in the New Territories. The 73-hectare Tai Po Industrial Estate was completed in the 1980s and it is nearly

filled with manufacturing enterprises. The 67-hectare Yuen Long Industrial Estate still has some sites left vacant. The 28-hectare first phase of the Tseung Kwan O Industrial Estate was opened in 1994 and the 46.5-hectar second phase is currently under construction. Moreover, land of two new sites, Tuen Mun Area 38 and Tseung Kwan O area 137, is being reclaimed to make more land available for special industries. These estates are planned for factories that require large areas of land, large amounts of water, and potentially hazardous installations (HKGID, 1996).

Recently, the New Technology Training Scheme and the Supplementary Labour Scheme have been launched in order to upgrade the quality of the Hong Kong workforce and to meet the demands of advancing technology. The Industrial Support Fund has also been set up to provide financial support for projects that will benefit the industrial or technological development of Hong Kong. The government has also involved itself in several schemes run by the Applied Research Council and the Hong Kong Industrial Technology Centre Corporation in order to increase the technological capabilities and competitiveness of the local manufacturing industry (HKGID, 1996).

Notwithstanding the above-mentioned efforts by the Hong Kong government, the swift expansion of industry to the Chinese mainland in the 1980s and 1990s left the government unable to prevent deindustrialization. Many factories bypassed the new towns in the New Territories and relocated in the PRD region of China. As a result, Hong Kong's manufacturing industry has remained small-scale and labour-intensive in the face of the government's plans to the contrary. It is certain that Hong Kong's domestic manufacturing industries will take advantage of the vertical disintegration system and, with the support of the government, concentrate their resources on high value-added production. At the same time, Hong Kong's economy will continue to act as the H.Q. of the manufacturing industry in the spatial division of labour as a result of vertical integration, while the PRD region assumes the role of production base.

4 Industrialization in the Pearl River Delta region

4.1. General condition of the manufacturing industry

The businesses combining Hong Kong and the PRD region (Fig. 10) have been thriving. According to the data of Census and Statistics Department, Hong Kong, the import of Hong Kong from the Chinese mainland accounts for 36% of the sum (HK$) in 1996; the domestic export to the mainland accounts for 29% (CSDHK, 1997). There has been a steep rise in the re-export of Hong Kong since the middle of 1980s, with approximately 90% of the re-export related to China. On the other hand, 60% of all foreign direct investment out of Hong Kong in 1996, including that by a third country via Hong Kong, was directed to the mainland, especially into the manufacturing industry in the PRD region. Needless to say, these upward trends of trade between Hong Kong and the PRD region keep pace with the development of the

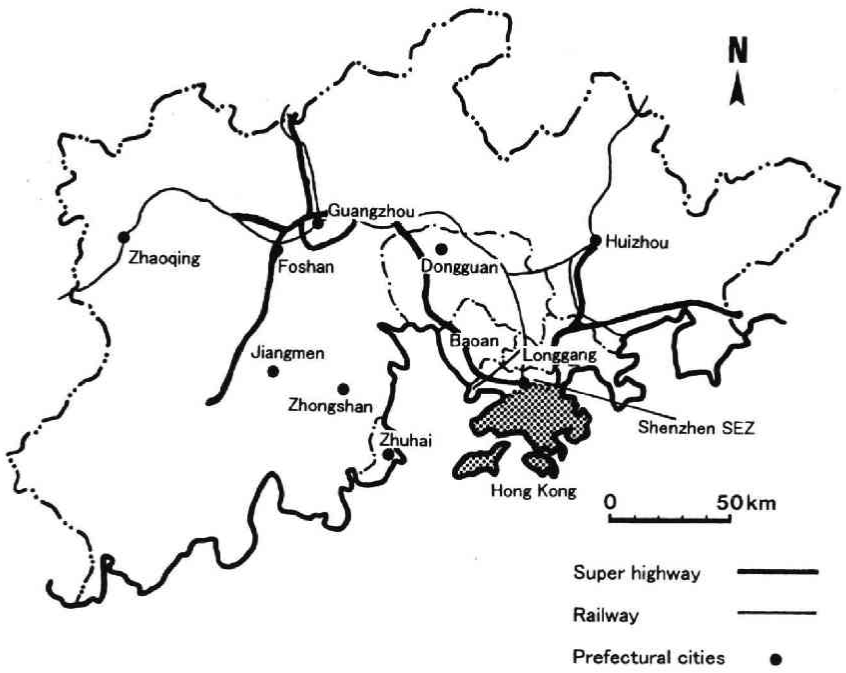


Fig. 10 The Pearl River Delta region

manufacturing investment.

The rapid economic development and the changes in economic structure of the PRD region from 1980 to 1995 in terms of GDP are shown in Table 2. While the share of GDP derived from primary industry has declined rather rapidly, there have been gains of 4.9% and 12.8% in the GDP derived from secondary and tertiary industries, respectively. Secondary industry had already become the leading sector by 1980, and it remains the largest sector in the economy still. The active entry into business under China's economic reform contributed to a sharp increase in the production derived from tertiary industry, especially in the second-half of the 1980s. Since GDP growth was much faster than population growth, the per capita GDP soared during those fifteen years (Data are calculated at current prices.).

Table 3 shows a comparison between the gross output of various manufacturing industries in the PRD region and in China as whole for 1995. "Electronic and Telecommunications" and "Electric Equipment and Machinery" in the PRD region account for 14.4 and 9.3% of gross output, respectively. Their locational quotients (LQ) based on the whole of China are as high as 3.3 and 1.8. "Garments and Other Fiber Products" and "Plastic Products" also indicate high percentages and LQs. These four sectors were, or still are, the major contributors to Hong Kong's manufac-

Table 2 Gross domestic product in PRD, 1980-1995

(100 million yuan, (%))

	1980		1985		1990		1992		1993		1994		1995	
Primary industry	30.74	(25.8)	57.25	(18.8)	129.38	(14.8)	175.90	(11.3)	206.06	(9.1)	261.84	(8.8)	314.93	(8.1)
Secondary industry	53.99	(45.3)	148.70	(48.9)	404.58	(46.4)	786.78	(50.5)	1,154.22	(51.0)	1,529.27	(51.3)	1,957.09	(50.2)
Tertiary industry	34.46	(28.9)	97.89	(32.2)	338.22	(38.8)	596.63	(38.3)	891.34	(39.3)	1,192.49	(40.0)	1,627.67	(41.7)
Total	119.19	(100.0)	303.85	(100.0)	872.18	(100.0)	1,559.31	(100.0)	2,265.29	(100.0)	2,983.60	(100.0)	3,899.69	(100.0)
Population (10 thousand)	1,628.66		1,756.87		1,927.82		2,007.55		2,056.28		2,095.26		2,137.73	
Per capita GDP (yuan)	731.83		1,729.50		4,524.18		7,767.23		11,016.45		14,239.76		18,242.20	

Source: Tabulation on regional economic statistics of Guangdong Province 1980-1993, Statistics of the Pearl River Delta Economic Region 1980-1994 and Statistical Yearbook of Guangdong 1996.

Table 3 Gross output of selected major manufacturing industry groups in China and PRD, 1995

(100 million yuan, (%))

Type of manufacturing industry	China		PRD	
Food Processing	3,865.35	(6.4)	232.91	(4.6)
Food Manufacturing	1,243.17	(2.1)	109.05	(2.2)
Beverage Manufacturing	1,284.24	(2.1)	114.95	(2.3)
Textile Industry	5,491.59	(9.1)	315.66	(6.3)
Garments and Other Fiber Products	2,169.91	(3.6)	226.77	(4.5)
Furniture Manufacturing	414.88	(0.7)	34.47	(0.7)
Printing and Record Pressing	529.71	(0.9)	59.14	(1.2)
Stationary, Educational and Sports Goods	520.23	(0.9)	119.36	(2.4)
Raw Chemical Materials and Chemical Products	4,409.58	(7.3)	261.14	(5.2)
Medical and Pharmaceutical Products	1,028.61	(1.7)	85.14	(1.7)
Plastic Products	1,679.12	(2.8)	197.07	(3.9)
Nonmetal Mineral Products	4,477.54	(7.4)	244.68	(4.9)
Smelting and Pressing of Ferrous Metals	4,154.32	(6.9)	60.62	(1.2)
Smelting and Pressing of Nonferrous Metals	1,622.73	(2.7)	64.43	(1.3)
Ordinary Machinery Manufacturing	3,192.93	(5.3)	95.26	(1.9)
Transportation Equipment Manufacturing	3,706.69	(6.1)	216.57	(4.3)
Electric Equipment and Machinery	3,178.35	(5.3)	467.83	(9.3)
Electronic and Telecommunications	2,692.31	(4.4)	721.33	(14.4)
Total	60,519.23	(100.0)	5,016.83	(100.0)

Note: This table shows gross output of manufacturing industry at the level of township (*xiang*) and above.

Source: Guangdong Statistical Yearbook 1996 and The Data of the Third National Industrial Census of the People's Republic of China in 1995.

turing industry, which suggests that these sectors of industry have relocated from Hong Kong. They have become the key industries in the PRD region and employed a large quantity of workforce for the assembly and processing of mass-produced goods. On the other hand, the capital-intensive industries such as "Nonmetal Mineral Products", "Smelting and Pressing of Ferrous Metals", "Smelting and Pressing of Nonferrous Metals", "Ordinary Machinery Manufacturing" and "Transportation Equipment Manufacturing" contribute little to the gross output in the PRD region in comparison to the industrial structure of the whole China.

4.2. Introduction of foreign capital through Hong Kong

Table 4 shows the increase in foreign investment actually used in the PRD region. Although the region comprises only 0.4% of the total land area of China and only 1.8% of the total population, 16 to 19% of total foreign investment is used in the region.

Table 4 Foreign investment in PRD, 1985-1995

(US$ 100 million)

Year		1985	1990	1993	1994	1995
National total		46.47	102.89	389.60	432.13	481.33
	PRD Economic Zone	7.39	16.54	64.15	82.99	85.79
	(%)	(15.9)	(16.1)	(16.5)	(19.2)	(17.8)

Source: China Statistical Yearbook 1998, PRD Economic Zone Statistical Data 1980-1994 and Statistical Yearbook of Guangdong 1996.

Data on the origin of foreign investment by country provided by the People's Republic of China reveals that around 70% of total foreign investment entering Guangdong Province comes from "Hong Kong" (GSB, 1996). However, although it is acknowledged that Hong Kong plays an important role in foreign investment in the PRD region, the actual value remains matter for debate. According to the "1995 Survey of External Investment in Hong Kong's Manufacturing Industries" by Industry Department, Hong Kong, the total value of newly added fixed assets of 424 foreign manufacturing enterprises that answered their questionnaires was HK$ 3,747 million in 1994 (JETRO, 1996). According to the "Hong Kong Annual Digest of Statistics 1996 Edition", the total value of gross additions to fixed assets of all manufacturing establishments was HK$ 21,168 million in 1994. Therefore, foreign investment accounted for at least 17.7% of total investment in the same year in Hong Kong. This data indicates that the importance of foreign capital not only to Hong Kong's manufacturing industry but also to manufacturing investment from Hong Kong to the PRD region can not be ignored. In fact, foreign enterprises are perhaps as likely to expand their business from Hong Kong into the PRD region as are local Hong Kong enterprises. Therefore, it is likely that the foreign investment from "Hong Kong" mentioned in the PRC's statistics also includes a certain amount of investment from third countries via Hong Kong. It can not to be denied that Hong Kong has already become a node of foreign investment into the PRD region.

Table 5 shows the destination of foreign investment in the PRD region by size of city. While the utilization of foreign capital in Guangzhou, the regional primate city, has relatively decreased, that in "Counties (rural areas)" has increased drastically. In the PRD region huge foreign capital has been extensively invested in towns and villages in rural areas rather than intensively in just a few larger cities. Fig. 11 illustrates the variations of foreign investment in the Shenzhen Special Economic Zone (SEZ) (established in 1980), Dongguan, and Baoan and Longgang (former Baoan county altogether) as the examples of a large city, a middle-sized city and a rural area, respectively. There was a sharp rise of investment in the Shenzhen SEZ toward the middle of the 1980s. The amount of investment stayed around US$ 400 or 500 million

Table 5 Amount of foreign capital actually used in PRD by city size, 1980-1994

	1980	1994	Cumulative amount (1980-1994)
Guangzhou urban districts (extra large city)	2,834 (28.1)	121,460 (14.5)	415,158 (14.6)
Shenzhen urban districts (large city)	2,657 (26.4)	172,959 (20.7)	764,888 (26.9)
Middle-sized cities	2,222 (22.0)	139,764 (16.7)	566,389 (19.9)
Counties (rural areas)	2,367 (23.5)	402,111 (48.1)	1,099,267 (38.6)
Total	10,080 (100.0)	836,300 (100.0)	2,845,702 (100.0)

Source: Statistics of the Pearl River Delta Economic Region 1980-1994
Note: "Middle-sized cities" comprise the urban districts of Zhuhai, Huizhou, Dongguan, Zhongshan, Jiangmen, Foshan and Zhaoqing.

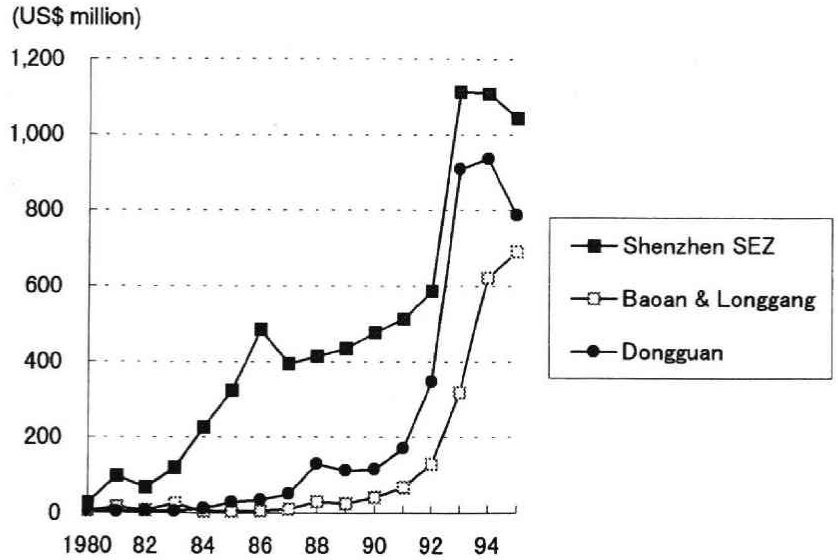


Fig. 11 Foreign investment in Shenzhen and Dongguan, 1980-1995
Source: Statistical Yearbook of Shenzhen 1995 and Statistical Yearbook of Dongguan 1995.

for some years before it more than doubled to US$ 1,100 in 1993. Foreign investment in Dongguan started to increase around the mid-1980s and it also rose sharply in 1992 and 1993. Baoan and Longgang witnessed an explosion of foreign investment in 1993 and 1994. This data seems to suggest that geographically extensive foreign investment in the PRD region dates from the mid-1980s and developed overall in the first half of the 1990s.

The foreign investment by sector in selected administrative divisions of the PRD region is shown in Fig. 12. In Dongguan and in Baoan and Longgang, areas which

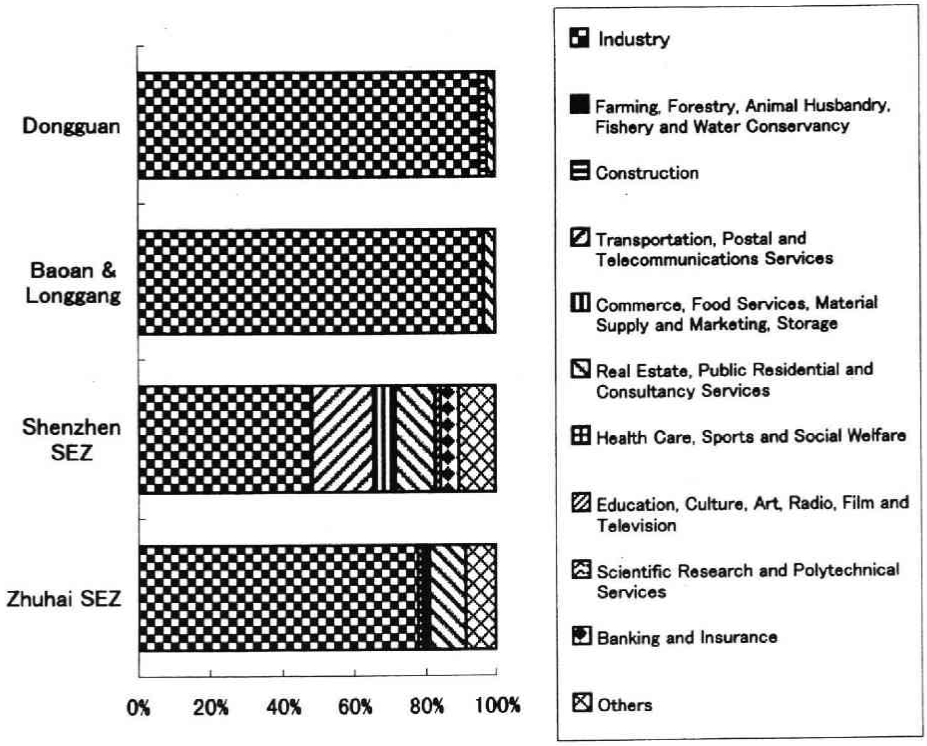


Fig. 12 Foreign investment by economic sector in PRD, 1994
Source: Statistical Yearbook of Shenzhen 1995, Statistical Yearbook of Dongguan 1995 and Statistical Yearbook of Zhuhai 1995.

specialize in manufacturing production for TNCs, most foreign capital (95.5% and 96.6%, respectively) was invested in "Industry". In the Shenzhen and Zhuhai SEZs, on the other hand, only 48.0% and 77.8% of foreign capital was invested in "Industry", respectively. While "Industry" was still the largest recipient of investment in these areas, other sectors such as "Transportation, Postal and Telecommunications Services", "Commerce, Food Services, Material Supply and Marketing, Storage", "Real Estate, Public Residential and Consultancy Services" and "Banking and Insurance" also received a share of foreign investment due to relatively advanced economic structure of the SEZs. As shown in Fig. 13, the percentage of direct foreign investment in Dongguan and in Baoan and Longgang was higher than that in the two SEZs. In general, direct foreign investment represents locational strategies of TNCs, while foreign loans usually represent capital flow between governments for public projects.

The age of indigenous economic development passed away in an instant in the PRD region. New factories are now being established one after another by TNCs.

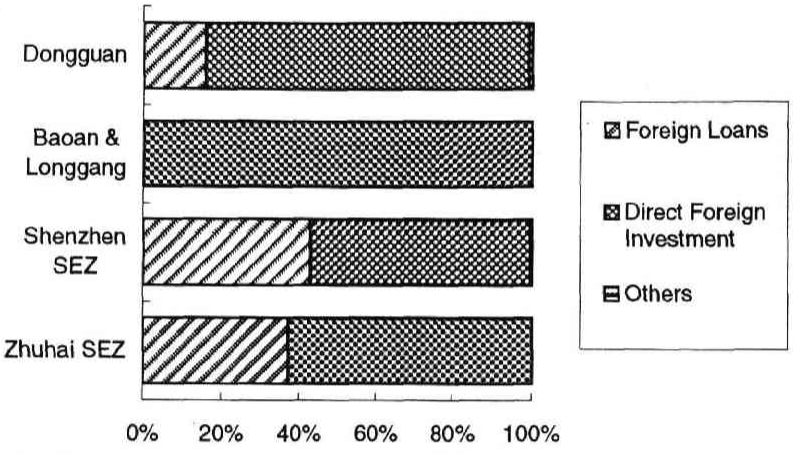


Fig. 13 Types of foreign investment in PRD, 1994
Source: Statistical Yearbook of Shenzhen 1995, Statistical Yearbook of Dongguan 1995, and Statistical Yearbook of Zhuhai 1995.

Foreign investment from Hong Kong has had a great influence on the regional landscape. Even local factories run by rural communities have been incorporated into the division of labour of TNCs through a form of out-processing. This dynamic movement has taken place since the 1980s as a continuation of Hong Kong's industrial restructuring toward further vertical integration.

4.3. Case studies of individual manufacturers

In order to understand the conditions of vertically integrated factory operations in the PRD region, let us see the following manufacturers. I interviewed them between 1993 and 1996; the description of case 2 is based on IRDFHKI (1992). They were introduced as typical in each township by the local authorities.

Case 1: T., Inc., Hong Kong Branch and B Township L Electronics Factory

The T Group is a multinational manufacturer and supplier of electronic components such as intermediate frequency transformers, ceramic oscillating elements and filters. The group was founded in 1955 with its H.Q. in Tokyo. The Hong Kong Branch was established in 1963 not only as a production site but also as an export-trading centre in Asia. It collected products from the group's overseas branch plants in Korea, Taiwan, Singapore, and Malaysia, and then exported these products to the U.S., Europe, and Japan. At its peak, the Hong Kong Branch, including a plant at Kwun Tong, had around 780 employees.

As market competition became more serious in the latter half of the 1970s and the 1980s, the Singapore Branch was forced to close its plant due to high production costs.

The plant in Hong Kong was also under pressure to stop productive operation for the same reason and began to look for an alternative location. The Hong Kong Branch tentatively invested in B Township on the outskirts of Shenzhen in 1981, at first employing only about 70 workers. By 1985, the Hong Kong Branch had started to make large-scale investment and had four factory buildings and a dormitory for female workers. In that year the size of the factory at B Township was already larger than the factory in Hong Kong. A second factory in China started production near the first one in 1989, and then a third was constructed in 1992. The number of employees in the three factories had reached approximately 5,000 by the end of 1993.

Formally, the Hong Kong Branch has made out-processing contracts with the L Electronics Factory managed by B Township, but in practice, these factories are branch plants controlled by T Inc. The top executives in each factory are sent from the Hong Kong Branch, and materials and equipment are imported through the Hong Kong Branch. After processing and assembly in the factories, all products are transported to and stored at the Hong Kong Branch. A percentage of the products are sent back to China, while the rest are exported overseas. The factories receive their orders for high-quality products through the Hong Kong Branch, and as the time limit for delivery is usually quite short it is necessary that the factories keep in close communication with the Hong Kong Branch. The factories are located on the mainland in order to reduce production costs, which includes the use of large numbers of inmigrant workers. Though they have the potential to move inland in order to benefit from the cheaper labour costs, these factories need to stay close to Hong Kong for reasons of transportation and communication for their intra-enterprise division of labour.

Case 2 : W Toy

W Toy (Hong Kong) has operated a factory in Bao'an since 1985. The plant covers an area of 30 thousand square meters and employs 3,500 workers. It is financed solely by foreign investment. Raw materials are imported from the United States, Canada, Italy, Japan, and Taiwan. 60% of products are exported to the United States through Hong Kong, though Europe is also an important market. Accessibility to Hong Kong is a significant factor in its location. It is about a three or four hour trip each way and costs about HK$ 1,000 for a lorry.

70% of workers are female and their average age is 19 to 20 years old. The average wage is RMB 340 to 400, which is paid at a piece rate. Because the total amount of wage corresponds to workload, the factory can automatically cope with fluctuations in order sizes, a factor which is peculiar to the toy industry. When there is little overtime work available, migrant workers are likely to resign from the factory voluntarily and try to find other higher paying jobs. The mobility of the workers is

quite high in the regional labour market. The village owns land, constructs factory buildings and workers' dormitories, and pays local taxes, while W Toy pays land use fee or a commission to the village. It also deposits the wages of workers employed locally into a village account in Hong Kong dollars.

Case 3: Hong Kong A Electronics and X Township A Electronics Factory

Japan A Co. Ltd., a Japanese general mechatronics manufacturer whose H.Q. is situated in the city of Kawasaki, near Tokyo, has established several production sites in Asia. It set up some factories in the Tohoku district of Japan in its early years in an attempt to get cheap land and low-priced labour force in order to cut production costs. As wages increased in Japan, Japan A decided to establish production bases overseas, and it opened a factory in Taiwan in 1980, and then in Hong Kong in 1986. The factory in Taiwan was closed in 1994. Japan A has some distribution bases not only in Japan but also in the U.S., Taiwan, Hong Kong, and the U.K.

Hong Kong A Electronics Co. Ltd. (HKA), a subsidiary company of Japan A Co. Ltd., signed an out-processing contract with X Township A Electronics Factory in China (XAF), a kind of township enterprise, in 1991. In fact, XAF was established on the basis of this contract. HKA imports raw materials and components, before trucking them to China. XAF engages in processing and assembly, and then sends the finished products back to Hong Kong. HKA re-exports the products to the global market through its distribution network. While XAF is chiefly in charge of production, HKA controls planning, marketing, technical development, and design. Although XAF is formally owned by G Village in X township, it is actually managed by HKA and its main management positions, including plant manager, are occupied by Japanese representatives stationed in the factory.

There are approximately 1,000 workers in XAF, 950 of whom are female, and their average age is 20. Most of them are inmigrant workers from Sichuan Province, Hunan Province, and the mountainous areas of Guangdong Province.

The out-processing contract between HKA and G Village, the owner of XAF, is renewed every five years. HKA pays rent to G Village for 13 thousand square metres of land and for 22 thousand square metres of the building floor space of factory, office, dormitory for workers, and so on. The rent for the land is RMB (*Renminbi*) 11 per square meter per month. Processing fees, proportionate to the number of workers, is paid to the village. A part of the fees which is equivalent to the wages of workers is deposited in Hong Kong dollars into a bank account of Bao'an district government. The wages are then paid to workers by RMB, so that part of the deposit is added to the revenue of the district and township governments by their handling of the exchange rate.

I agree with Sit (1989a, b) in thinking that the growing manufacturing industry in

the PRD region is an extension of the manufacturing system of Hong Kong. Almost all factories in the PRD region have close business relations with firms in Hong Kong. Some subcontracting ties are extensively developed through social networks between Hong Kong manufacturers and factories in Guangdong (Leung, 1996). However, it is not correct to regard the phenomenon as a simple extension of Hong Kong's flexible production system. There has been a qualitative transition in the manufacturing industry in Hong Kong from vertical disintegration to vertical integration. The manufacturers in the PRD region are now engaged in mass production with a large number of workers. Unlike Hong Kong, there is few synergistic production or business networks within the PRD region.

5 Concluding remarks

Since the 1970s, some enterprises in Hong Kong have started to integrate production processes and organize large-scale factories. Several other functions of H.Q. such as managerial decision-making, various marketing activities, inventory and distribution management, technical and quality supervision, R & D, and financial arrangements have also been integrated within an enterprise. Total marketing strategy has been frequently managed by some large enterprises, which are invested by foreign capital of the United States, Japan, Taiwan, and so forth, as well as by local capital of Hong Kong. The large-scale factories have located themselves in new industrial districts near new towns where large amounts of land are available. They no longer need to agglomerate in the congested traditional industrial districts nor to have face-to-face business connections with other enterprises, because they can now manage various functions internally.

Since the 1980s, this technical and managerial integration has been increasingly promoted. Factories have grown in size and have relocated in remote areas to make use of the availability of land and the cheaper labour force. The PRD region has naturally been a favorable location for these large factories. Thus, the spatial range of enterprises has been expanding, though this expansion is not unlimited. The upper bounds of expansion are determined by the accessibility of the factories to raw materials, product markets, and their H.Q. in cities, which is guaranteed by the transportation and telecommunication infrastructure. The lower bounds are, on the other hand, determined by the pressure of production costs. As land prices and wages rise, factories are forced to move away from urban areas. Although it is difficult to specify the upper and lower bounds of this expansion on a map, it seems reasonable to state that the upper bounds roughly correspond to the area around the PRD region in which a great deal foreign investment has been made. As for the lower bounds, according to the interviews with some managers in the PRD region, the Shenzhen SEZ no longer seems to be a favourable location for manufacturing activities nowadays due

to high production costs.

The relocation of production sites away from urban areas in order to restrain swelling production costs can cause deindustrialization. In this respect, Hong Kong is not an exceptional case. The number of persons engaged in the manufacturing industry in Hong Kong has been declining since the middle of 1980s, and the number of establishments has also fallen since the latter-half of the 1980s. However, this process is not irreversible nor is the decline of manufacturing inevitable. The flexibility under the system of vertical disintegration does provide advantages to a type of production which is based on providing a wide variety of goods in small quantities. Hong Kong's domestic manufacturing industry has already begun to make efforts to raise the added value of its products.

In conclusion, this paper has demonstrated that the changes in industry in Hong Kong since the 1970s can be explained as a process of vertical integration. As a part of this process, some manufacturing enterprises integrated their production processes and marketing functions, enlarged the size of establishments, and dispersed their factories first to suburban areas in Hong Kong, and then to the PRD region beyond the border, while leaving their H.Q. in Hong Kong. The restructuring process has further been promoted by the surge of foreign investment and by the expansion of Asian markets in the context of NIDL.

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