This is to certify that the

dissertation entitled

Industrial Restructuring and Regional Division of Labor: A Study of the Electronics Industry of Hong Kong and Shenzhen Special Economic Zone (PRC)

presented by

Lai Si Tsui-Auch

has been accepted towards fulfillment of the requirements for

Ph.D. degree in Sociology

Major professor

Date 5-3-95

INDUSTRIAL RESTRUCTURING AND REGIONAL DIVISION OF LABOR: A STUDY OF THE ELECTRONICS INDUSTRY OF HONG KONG AND SHENZHEN SPECIAL ECONOMIC ZONE (PRC)

By

Lai Si Tsui-Auch

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Sociology and Urban Affairs Programs

1995

ABSTRACT

INDUSTRIAL RESTRUCTURING AND REGIONAL DIVISION OF LABOR: A STUDY OF THE ELECTRONICS INDUSTRY OF HONG KONG AND SHENZHEN SPECIAL ECONOMIC ZONE (PRC)

By

Lai Si Tsui

This dissertation discusses the industrial restructuring and regional division of labor between H.K. and Shenzhen SEZ through a study of the electronics companies (H.K. and global) based in H.K. The impacts of industrial restructuring on, and the development pathways of both cities are examined. The findings are based on: (I) documentary research, and (II) fourteen case-studies of electronics companies through personal interviews with manufacturers, and factory visits in both cities.

Research findings indicate that regional production integration has brought about short-term benefits for both cities with trade-offs for long-term development. H.K. benefits from cheap labor and land supply from the SEZ, but suffers from a further delay in technological upgrading. The economic restructuring has transformed the city towards a center of managing cross-border production and providing regional service, and its working classes bear the cost of economic transformation. H.K. is increasingly integrated into the regional division of labor of Guangdong Province; the

regional division is structured in a way that Shenzhen and the Pearl River Delta cities have become similar but separate entities dominated by H.K. capital, and compete against each other for foreign direct investment. Shenzhen SEZ has had high economic growth rates. But its industrial development has exhibited a lack of significant technology anchorage, skill formation and linkage effects, and remained over-dependent on migrant labor. Facing intensifying competition from the Delta region, the SEZ is attempting to follow the pathway of H.K. to build a service economy. A one-dimensional orientation of both H.K. and Shenzhen towards service economy building without technological and industrial upgrading increases the vulnerability of both cities to the global economic fluctuations.

Whether the existing regional relationships can be translated into a more positive, developmental one depends on the political decisions of the present and future governments of both sides, with the impending unification of H.K. and China. Leaving the decisions to the invisible hands of the market will only enlarge the economic, social and regional inequity.

ACKNOWLEDGMENTS

For the completion of this dissertation, I would like to convey my first and heartfelt thanks to my Ph.D. Guidance Committee members. Professor Richard Hill has given me valuable comments on my papers, proposals and dissertation draft at various stages of my doctoral program no matter where he was--in Japan or on MSU campus. I am especially grateful to him taking me as research assistant in the third year of my program. Professor Bella Mody, for whom I have worked as research assistant during the first two years of my study, has offered me many opportunities to experiment ideas, to write and to interact with scholars from diverse backgrounds. Professor Kevin Kelly's lectures in "social stratification" has stimulated me to study the capital-labor relations in the semiconductor industry in California, which has laid down the foundation of this dissertation. Professor Chris Vanderpool has directed me to reflect upon the structure-agency problematic. Through his sponsorship I have obtained financial support from the Department of Sociology, School of Social Science and Graduate School.

I thank the 40 manufacturers and managers who cooperated in my study. I thank particularly Mr. Siu Ming Lui for sharing his inside's view of the electronics industry, and Mr. Bin Zhou and his team of colleagues for providing contacts and guiding me during my factory visits in Shenzhen. Professor

Edward Chen (Director, Center of Asian Studies, University of Hong Kong) has facilitated my research by offering me the Visiting Scholar status, office, and administrative support. I also thank the staff at the Center of Asian Studies, H.K. University Library, Chinese's Special Economic Data and Research Unit (Chinese University of Hong Kong) and H.K. Trade Development Council.

I owe special thanks to my brother, Mr. Hon Chung Tsui, who has supplied me information for this research in the past two years. Hon Chung, Hon Ming and Mr. Kai Wo Cheung (my brother-in-law) have offered me contacts for this research. Kai Wo has also provided me in-depth explanation about the technical details of the electronics manufacturing. I would like to thank friends and colleagues at MSU--Nai Hua and Jey Sundram for commenting on my dissertation proposal; Min Zhou, Wei Chen, Yuko Tasaki, Uta Knoche and Barry Bain for cheering up during my difficult time.

My greatest debt of gratitude must be offered to my family and my husband's family and relatives. Their love, support and acceptance of the changes in my life have encouraged me to carry on. I reserve the last acknowledgement for Mark Auch, my husband. Without his painstaking efforts in editing, formatting and printing the dissertation drafts, I would not have been able to take the oral defense as scheduled. I owe my special thanks for his love and patience.

To all of you, I offer my warmest thanks.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ANICs: Asian newly industrialized countries

Bn: billion; (Mn: million)

CTV: color television

EPZ: export processing zone

FDI: foreign direct investment

EJV: equity joint venture

H.K.: Hong Kong

OEM: original equipment manufacturing

PCB: printed circuit board

PRD: Pearl River Delta

R&D: research and development

RHQ: regional headquarters

SEZ: special economic zone

"san ci": three kinds of investments--wholly foreign owned venture, equity joint venture, cooperative joint venture

US: United States

UK: United Kingdom

WFO: wholly foreign owned subsidiary

HK$: Hong Kong dollar; US$1 = HK$7.8 (The HK$ has been linked to the US$, through an arrangement in the note-issue mechanism, at a fixed rate since 1-17-1983)

RMB: Renminbi (yuan), the official currency of China; US$1 = roughly RMB8.6 (current rate)

INTRODUCTION

1.1. PROBLEM

The continuation of China's Open Door policy, the economic transformation of Eastern Europe, and the reopening of Vietnam proclaims a "truly" global economy covering areas previously outside the orbit of transnational capital. However, coincident with the intensifying globalism, a trend towards regional economic integration has emerged.

Regional economic integration is consistent with the emerging strategies of transnational corporations (TNCs) to build regional core network of affiliates centered upon their home countries. Attention has so far been paid to the regionalization of production and trade centered on the Triad members (European Community, U.S. and Japan) (UNCTC 1992). In the West, one can see the formation of European Community (EC) 1992 and North America Free Trade Agreement (NAFTA). In the East, Japanese companies have incorporated East and Southeast Asian countries into their regional procurement, production and marketing networks. The Japanese, with a strong yen, has few choices but to look for low-cost Asian contenders.

New economic power bases represented by the ANICs (Asian newly industrialized countries) and overseas Chinese have

emerged in Asia and the Pacific (Kao, 1993). By the end of the 1980s, H.K. was second to Japan as the largest source of foreign investment in Asia. H.K. has become the second largest overseas investor of Indonesia, Vietnam and Sri Lanka; and the third largest of Thailand. Taiwan is the second largest overseas investor of Malaysia and third largest of the Philippines. South Korea is the largest overseas investor of Sri Lanka and active in investing in Indonesia and the Philippines (AMRC 1992). Some Southern Korean companies have already initiated processing trades with the North Korean[1] (Hoon, 1994). Singapore does not have a huge base of national capital but the government has launched the "growth triangle" scheme since 1989 to take advantage of cheaper land and labor from the neighboring border cities of Johor (Malaysia) and Batam (Indonesia).

Even Malaysia and Thailand have started to take advantage of the lower factor costs in their neighboring countries. Malaysian conglomerates have been investing heavily in auto assembly, power plant construction and banking in the Philippines since 1994 (Tiglao, 1995). A few Thai companies have been investing in the construction of container terminals and power plants in China in recent years (Huus, 1995). Accelerated by the pressure from the creation of regional

economic blocs around the world, Asia is gearing up towards further integration (Figure 1).

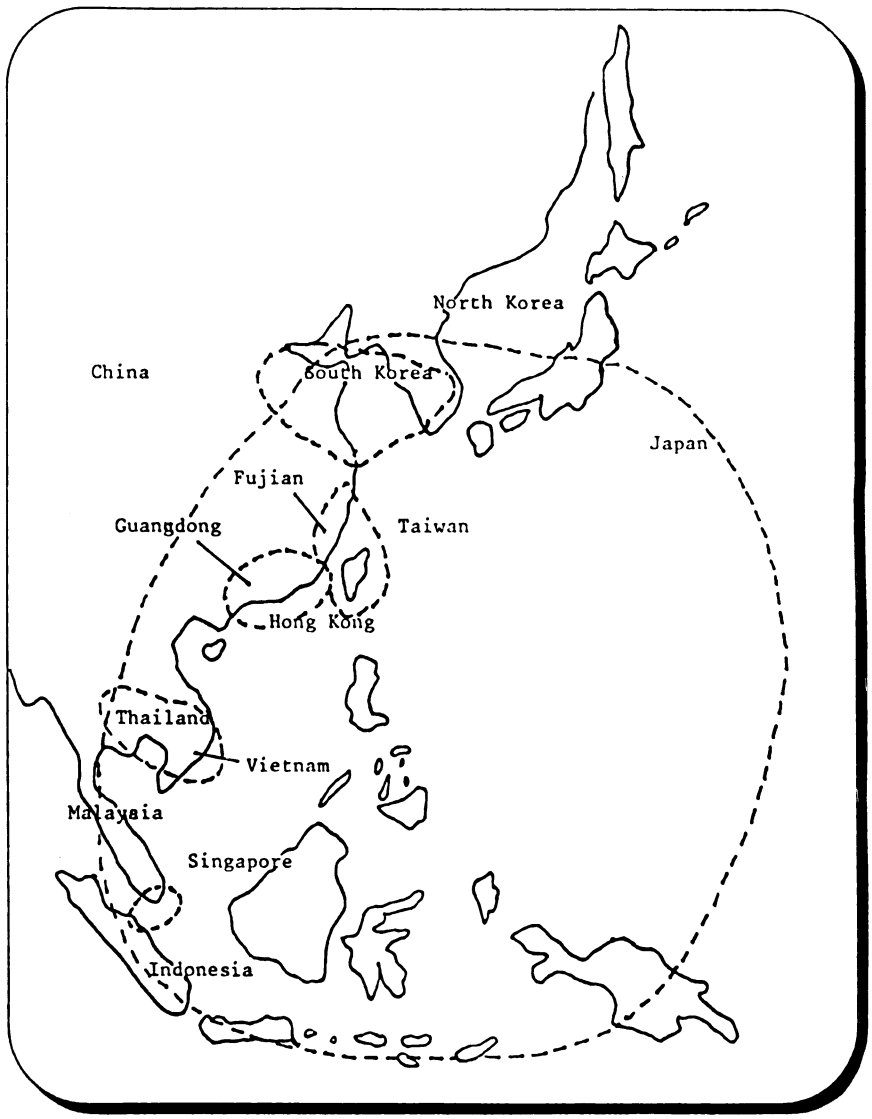


Figure 1: Economic Cooperative Regions in Asia

Modified from Fujita K. (1992), Flexible Specialization, Globalization and the International Division of Labor. Paper presented at Osaka City University Institute of Economic Research, Osaka, Japan. December.

The reintegration of China into the global economy brings both opportunities (its largely untapped domestic market) and threats to its regional neighbors (its wage rate even lower than that of the Philippines; just a little higher than that of Vietnam). China has had an average annual growth of around 10% since 1980. It has been seen as a "locomotive" of growth, taking in imports and investments from all over the world (Zielenziger, 1994: 72). China's northern and middle coastal provinces are targets of Japanese and South Korean companies for offshore production. Dalian (Liaoning) is said to be fast becoming to Japan what Mexico is to the U.S.--a low-cost manufacturing site within easy reach of the home office[2] (Thornton, 1994). Shanghai has received investments in automobile, electronics and industrial engineering from Japan and South Korea (Sender, 1995a).

China's southern coastal provinces have become targets for offshore production from H.K., Taiwan and to a lesser extent, Singapore whose nationals have ethnic and cultural ties to China. The manufacturers operating in H.K. pioneered the relocation of labor-intensive processes to China in the early 1980s, and the manufacturers of Taiwan and Singapore adopted the same move in the mid- and late 1980s. H.K. has been the largest overseas investor of China, accounting for two-thirds of the total foreign investment, and 25,000 companies. Guangdong Province received 80% of foreign investment from H.K. Investors from H.K. produce two-thirds

of Guangdong's industrial output and employ 3 million workers in the Province (HK Yearbook 1994).

Regionalization of production has taken place despite opposition from the state; Taiwanese manufacturers have constituted the largest investor in Fujian Province. The Taiwanese government feared that close economic ties with China would make it vulnerable to economic blackmail. However, the state has allowed its companies to invest in China indirectly via third countries (mostly H.K.) since September 1990 (see Jones et al., 1992). It further loosened its regulations on investments in China in 1993[3]; an investment under US$1 million does not need to go through third countries (Baum, 1994-5). Recently, some provincial and local governments of Chinese coastal provinces have offered special protection to Taiwanese investors by concealing the investors' names and assets from the public. 12,000 Taiwanese companies are operating in China. Taiwanese businessmen funneled US$21 billion in exports to H.K. and through H.K. to China in 1994 (Baum, 1995).

The Singaporean government has focused on building an "external economy", meaning to invest its surplus in foreign countries. In 1993, the government announced that the country should not rely solely on Singapore and Malaysia (partially because of the limited success of the "Growth Triangle") but to produce a "real" external economy with 20% of all Singaporean graduates and their families living and working abroad[4]. The government-linked companies have started to

invest heavily in China as witnessed in a US$6.3 billion project "Singapore II" - to build an entire city near Suzhou in 10 years (Sender, 1995b).

The major players shaping the regional division of labor are no longer only the TNCs of the First World but small-medium companies of the ANICs. This has given rise to a number of questions: Do the new "TNCs" adopt investment strategies different from those of the "traditional", "old", "Western-Japanese" TNCs? How do corporate actions affect the ANICs and their regional neighbors? Does the regional division of labor reflect a dominate/subordinate relationship similar to any core-periphery relationship denoted in the dependency/world system/new international division of labor theorists; or is it likely to actualize the notion of "south-south" cooperation and to develop a more equitable relationship?

1.2. THESIS STATEMENT

This dissertation deals with the issue of industrial restructuring and regional division of labor. I shall situate the issue in an industrial-city-regional context, studying the electronics restructuring in Hong Kong and Shenzhen SEZ.

"Industrial restructuring" refers to the structural changes in the product mix and technology, the efficiency and relative size of industries. It can take place at a firm, industry and industrial sector level. It involves the transfer of productive resources from one part of the economy to another, and sometimes even across national borders (Ho, 1992).

"Regional division of labor" in this research refers to a situation that companies extend their production system beyond the national borders to production sites in the neighboring countries. Cities or countries develop a mutual relationship in industrial production and become integrated economically; they can no longer be functionally autonomous in industrial/economic development.

H.K. seems to lack the characteristics of a "traditional" core as seen in their dependence on markets, technology and components of First World countries, and their vulnerability to protectionist measures. But it appears to be a regional center of capital and economic power. China is not a typical Third World country; it has a high economic growth rate as well as political and military influence on the Pacific region and the world. While its coastal cities are depending on H.K. (and Taiwanese) investment, China itself is going to resume its sovereignty over H.K. in 1997, and enticing Taiwan to accept political reunification in the future. The regional economic integration is inter-linked with the issue of political unification.

Shenzhen is located north across the H.K. border. An area of 327.5 square kilometers was enclosed to be a SEZ in 1980. The SEZs are 'special' in the sense that they are the first areas within Communist China based on free market mechanisms and in which foreign participation is promoted. Shenzhen, with its geographical proximity to H.K., has been a

cheap labor haven for H.K. industrialists throughout the 1980s.

The electronics industry is regarded as a basic, modern and strategic industry because electronics penetrates every aspect of life--production, consumption, military and defense, and technological development. The industry produces a very broad range of products from the very simple to the very complex, from "mature" to rapidly changing technology. Hundreds of parts and components that make a completed electronics product can be arranged on a value-added continuum. Numerous small-medium local manufacturers of East and Southeast Asian countries have set up small workshops to produce electronics parts of lower added values and to supply them to global corporations since the 1960s. The electronics industry bears a "clean" and "non-polluting" image (though it is reported to have caused health deterioration; see Grossman, 1979). Governments of many countries have encouraged electronics industrial development in their countries.

The electronics industry[5] has been a highly globally diffused industry, and the biggest recipient of foreign direct investments in the manufacturing sectors of many Asian countries. It has been a driving force behind many Asian economies based on its significant share of the national manufacturing exports[6]. In H.K., the electronics industry has been the biggest recipient of foreign direct investment in the manufacturing sector since 1971, and the second largest employer in the manufacturing sector (after garment and

knitwear). The industry has been the largest industry of the Shenzhen SEZ and the largest employer in the manufacturing sector since 1984. Shenzhen, as compared to cities in the surrounding, hosts a much greater number of foreign investments, and has attracted more wholly foreign-owned subsidiaries and joint ventures than processing and assembly arrangements (HKFI, 1992). Hong Kong manufacturers constitute the largest investing group, followed by the Taiwanese, Japanese and Western manufacturers.

The major force of industrial restructuring in this region is the capital--both H.K. manufacturers and Western-Japanese manufacturers based in H.K. While the H.K. capital constitutes the largest overseas investor in the SEZ, the Western-Japanese capital is expected to bring about a greater qualitative impact (in terms of technological upgrading) on the SEZ. The Western-Japanese capital has a significant production investment in H.K. Their restructuring can exert a strong impact on the working classes in the colony. The research is designed to find out various corporate strategies adopted by both H.K. capital and the Western-Japanese capital.

1.3. RESEARCH QUESTIONS AND METHODS

The research theme is articulated in the following three questions:

(I) How do electronics companies based in H.K. restructure their investments with the opening of Shenzhen SEZ?

(II) What are the impacts of the restructuring on both cities?

(III) What is the industrial and socio-economic relationship between the two cities, and which pathways are they leading?

This research is based on: (a) documentary research; and (b) case-studies through face-to-face interviews(based on a pre-set, structured questionnaire with open-ended questions) with electronics manufacturers and factory visits in both cities. The questions cover:

(i) production organization,

(ii) technological investment,

(iii) industrial linkage,

(iv) employment structure, and

(v) assessment of the region.

The companies are chosen based on the following four criteria:

(I) the labor- and capital-intensity of production

In this research, I classify production into labor-intensive or capital-intensive categories. In the capital-intensive production, I confine my research to the semiconductor industry. In the labor-intensive manufacturing, I find it unnecessary to limit the sampling to a particular product since the production technology and cost dynamics of products in this category are similar. In this research, I have identified manufacturers of audio products, color TVs, telephone sets, computers (mother-boards), and DC-DC converters.

(II) the location strategies

Different plant location strategies adopted by electronics manufacturers include: (a) setting up production in Shenzhen while maintaining manufacturing facilities in H.K.; (b) relocating the production completely to Shenzhen, and keeping only the managerial and design operations in H.K.; and (c) maintaining production in H.K. without relocation.

(III) the structure of the capital

In this research, I have identified nine H.K. companies and four global corporations (one Japanese, two U.S. and one fast-expanding H.K.-China joint venture).

(IV) the form of contract undertaken in Shenzhen

Among the manufacturers who have set up subsidiaries in Shenzhen SEZ, seven engage in wholly foreign owned ventures; two in equity joint ventures, and three in cooperative joint ventures.

Through desk and computer database research, I collected secondary information from news agencies, research institutes, industrial associations and government departments. Statistics and data gathered include: (I) the electronics industry of Hong Kong and Shenzhen; (II) macroeconomic data/policy of Hong Kong and Shenzhen (and Guangdong Province); and (III) the electronics industrial development in Asia and the Pacific.

1.4. Chapter Arrangement

Chapter 2 and 3 are to provide research directions. Chapter 2 gives a review of the literature on the structuring

of the world system, the restructuring of the global economy as a result of technological change, TNC investment strategies, the rise of NICs and their capital, as well as regionalism. Finally, the literature on the H.K-Shenzhen-Guangdong economic integration will be reviewed to highlight the direction of research. In chapter 3, I shall clarify the research concepts, the rationale of the research methods and field experience.

Chapter 4 and 5 discuss the regional-city-industrial contexts. In Chapter 4, I shall provide a brief history of H.K.'s political-economic development that has led to the recent regionalization of production and political reunification with China. I shall give a brief account of Shenzhen SEZ's development in the context of China's economic reform. Chapter 5 covers the global diffusion of the industry since the post-war era from the U.S. to Europe and Asia. It describes the crucial technological change, global competition, and the changing role of various countries in the Asian regional division of production. A special attention is paid to the actual and potential competitors of H.K. and Shenzhen.

Chapter 6 is a report of case-studies of electronics companies. The chapter starts with a report of the restructuring of the semiconductor manufacturing with a specific focus on three major companies, one U.S. leading advanced IC producer, one British-H.K. IC subcontract assembler, and one H.K. logic chip producer. The second part

is a report of manufacturers engaging in labor-intensive production, including one Japanese consumer product manufacturer, one U.S. electronics component manufacturer, one fast-expanding H.K.-China computer manufacturer, and a group of eight H.K. manufacturers of small-medium companies.

Chapter 7 and 8 are analysis sections. Chapter 7 summarizes the research findings based on both case-studies and documentary research. I shall analyze the patterns of corporate restructuring, the changing division of labor between H.K. and Shenzhen as well as the impacts on both cities. The chapter provides an account of H.K.'s economic and social influence on Shenzhen, and the economic development directions of both cities perceived by the industrialists. The chapter concludes with a review of the research methods and techniques.

In chapter 8, I shall discuss the political-economy of industrial restructuring and regional division of labor, and the problems of the present economic development directions. I shall outline the possibilities of industrial upgrading for both cities. Chapter 9 sums up the research findings, based on which I shall reflect upon some theoretical concerns highlighted in the literature review.

1.5. A NOTE ON TERMINOLOGY

"Third World countries" refer to the poor and non-industrialized countries in Asia, Latin America, Africa and the Caribbean. First World countries include those industrialized market economies of the U.S., Canada, Western

European countries, and Japan. When I use these terms, I employ them only as abstract categories to denote certain common characteristics. I acknowledge the intense diversities that prevail among different countries.

Starting from chapter three, I shall use the term "global corporations" instead of "TNCs", and "H.K. companies" but not "H.K.-TNCs". Since manufacturing companies in H.K. are mostly small and not world-class companies, I hesitate to use the term "TNCs" to denote these entities even though they, by definition, can be classified as transnationals.

1.6. RATIONALE FOR STUDY

The formation of economic cooperative regions has been intensifying. Attention has so far been paid to the regionalization of production and trade of the Triad members. This research represents a step to recognize the regional division of labor shaped by the capital of the ANICs. Whether the regional division of labor between the ANICs and their regional neighbors (I) exhibits a dominate/subordinate relationship similar to any core-periphery relationship, (II) actualizes the notion of "south-south" cooperation, or (III) reviews a new phenomenon that requires a revision of the existing theories, deserves rigorous research efforts.

The H.K.-Guangdong integration shares an interesting parallel to the integration led by Singapore as the city-state is the center of capital and economic power. The H.K.-Guangdong integration shares another interesting parallel to that led by Taiwan as the small-medium capital dominates the

investment, and both political entities are targets of political unification of China. A study of the H.K.-Guangdong integration can be a base for further comparative studies.

Much of Guangdong Province's economic growth concentrates in the Pearl River Delta region where the development experience of Shenzhen has largely repeated. A review of 15 years' (1980-1994) development and change of Shenzhen SEZ is hoped to enhance the understanding of the impacts of transnational capital in the SEZ, the PRD region and the larger Guangdong Province.

The regionalization of production is a product of corporate actions and political decisions, and not a result of pure market force. An evaluation of the social and economic impacts of corporate actions, and state policies on regional division of labor is a first step to design proactive policies to enhance economic and regional equity.

2. LITERATURE REVIEW

The emergence of regional economic integration coincident with globalism is related to the restructuring of the world economy, the rapid technological changes, adjustment of transnational corporations (TNCs), the rise of the newly industrialized countries (NICs) and the NIC capital. The changing situations make it necessary to rethink the existing paradigms. In this chapter, I shall review first the existing paradigms to assess their usefulness in enhancing the understanding of regionalism. I shall review then the studies on regional division of labor, particularly on the H.K.-Shenzhen-Guangdong integration.

2.1. DEVELOPMENT PARADIGMS

Paradigms, conservative or radical, use dualistic notions and a dichotomy of modern/backward (in modernization paradigm) and center/periphery (dependency theories) to describe the structure of the global system, leaving little space to accommodate the concepts of NICs and regionalism.

2.1.1. Modernization Paradigm

Modernization writers differ widely in disciplinary focus, theoretical models and level of analysis, but share broad assumptions that the world consists of "modern" and "backward" countries, and assume a continuous linear march of

countries through stages of development toward "progress" and away from "backwardness", in economic, political and socio-cultural arenas (Rostow, 1971). Economically, backward countries benefit from global linkages. Politically, economic development will lead to the development of democratic institution (Black, 1966). Modernization theorists endorse the "gap" approach regarding underdevelopment as a result of missing knowledge, values, technologies, resources and institutions, which are found in the developed countries. They endorse a "subtraction" model suggesting subtraction of features of underdevelopment from those of development, similar to the Parsonian pattern variable model (see a summary in Blomstrom & Hettne, 1985).

2.1.2. World System/Dependency Theory

Although many Third World countries obtained U.S. economic aids, attracted foreign direct investments and modelled after Western ideas and culture, they failed to catch up with the West. The gap between the First World and the Third World was not bridged. The modernization paradigm was therefore subject to severe challenge by the dependency paradigm. Frank, Wallerstein and Amin have been the most influential world system/dependency theorists and had numerous followers. Common to them is the notion of the existence of a single world system vertically and hierarchically stratified. Capitalist development in the "core" or the "metropolises" necessarily creates underdevelopment of the

"periphery" or the "satellites" in the world capitalist system.

Frank's (1967) theory is based on his understanding of the political-economic development of Latin American countries. He asserts that development and underdevelopment are causally interrelated through international exchange, and therefore peripheral capitalist development is impossible in the present and future phases of world capitalism. The continuing integration of the periphery into the world capitalist system will create further underdevelopment. In response to the rise of the ANICs, Frank (1981) terms them as "secondary client states". He argues that the export-oriented industrialization has led to the repression of labor, and an increase in foreign debt and balance of payment problem, and the repression of labor. Its contribution to employment generation and technological development was limited. For Frank, development is not defined by an increase in GNP per capita or any other aggregate economic indicators, but by the attainment of economic sovereignty and the fulfillment of indigenous needs of the people. Frank and many other dependency theorists prefer to see a "south-south cooperation" among peripheral countries and dissociation of the periphery from the core.

Amin, similar to Frank, perceives that the world system is stratified into a center and a periphery. The growth and development in the periphery is obstructed by its internal structures of productive forces and relations (e.g., over-

specialization) and by its external relations (the drain of resources through unequal exchange imposed by the center), that is, by factors internal to capitalism. Such a schema explicitly rejects the classification of a part of the periphery as NICs. The analyses of individual peripheral countries are pointless because they do not have any internal dynamism of their own.

Amin's conception of the world economy is based on his understanding of the African development. Regarding the four ANICs and Mexico, he dismisses their economic development as demonstrating a new form of inequality and problems--a narrow focus on manufacturing activities, a "semi-aristocracy" of labor, a vulnerable balance of payments, an absence of national capital, as well as a lack of technical advancement of labor and independent development.

Wallerstein (1974, 1979), similar to Frank, assumes that the capitalist world system has continued to expand and incorporated almost all countries of the world into a complex system of functional relationships since the 16th century. The capitalist world system is characterized by a geographically differentiated division of labor among the stratified core, semi-periphery and periphery.

Unlike the dependency theorists, Wallerstein does perceive the need to include the notion of the semi-periphery (an intermediate tier between the core and periphery). The semi-periphery is a descriptive category only--one that does not arise as an outcome of his analysis. Wallerstein does not

explain why countries have changed their positions in the world system hierarchy. The change in positions of individual states does not foretell a change in the system itself. This change may have been a product of the long cycles of expansion and contraction of the world system. A historical system as such will face its demise in the long run.

Wallerstein (1979) does not envision any positive developmental effects of transnational capital, the state and domestic capital of the semi-periphery. The existence of the semi-periphery sustains the continual dominance of the core. Semi-peripheral countries function to avoid a unified opposition of peripheral countries against the world system since they themselves are exploiters, benefitting from their exploitation of peripheral countries. In addition, they present themselves as examples to peripheral countries for upper mobility and can thereby dissolve opposition.

It is evident that the theories of dependency and world system are inadequate in enhancing the understanding of the NICs. South Korea, Taiwan, H.K., Brazil and Mexico have cultivated a national capital. They have attained at least a level of technical progress and internal dynamism that most peripheral countries failed to. However, Amin simply dismissed the documentation of this progress as empiricist and superficial (see Browett, 1985).

Frank does not make possible comparisons on two aspects: (I) what occurred previously in the NICs; and (II) what is happening in other peripheral countries. He compares the

recent growth performance only with a hypothetical situation that would occur if the people of these countries used locally produced surplus rationally to meet indigenous needs (see Taylor, 1974).

Wallerstein, when lumping all countries into a single world system, paradoxically takes the "nation-state" as the unit of analysis. Yet the formation of small and large regional blocs integrating nation-states, and the integration of export-oriented cities, rather than a whole national economy integrating into the global system, requires alternative conceptions and perspectives.

2.2. Urban Theory

2.2.1. Hymer: TNCs and Uneven Development of Cities

Hymer's (1972) study looks at the uneven development among "cities" caused by the transnational capital. He posits that spatial uneven development among cities is caused by transnationals' globalization of production. He conceptualizes the world system as a TNC-dominated spatial division of labor, spatial hierarchy and spatial domination/subordination. He links the organizational evolution of TNCs (the increasingly complex and efficient multi-product, multi-divisional structure) with the geographical dispersion of production. Cities emerge as the points of organization for TNC activities, and different cities play different roles. The top level activities are located in capital cities, near to financial markets and governments; the middle level administrative activities are in

large cities to tap white collar workers and communication systems; and the extractive, manufacturing and sales activities are located all over the globe according to the pull of labor, markets, and raw materials. Hymer's effort to explicate the relationship between cities and transnationals' activities is further elaborated by Friedmann and Wolff (1982).

2.2.2. World City Hypothesis

Friedmann and Wolff (1982) hypothesize the spatial articulation of the emerging world system of production and markets through a global network of cities called "world cities" (1982: 309). World cities are "centers for the accumulation of capital and, especially in the case of the national capital in the semi-periphery, also of national political power. They are cities through which national economic growth is 'articulated' with the world economy" (Friedmann, 1987:4). Friedmann offers an elaborate description of the world cities based not only on their production role but their service provision. World cities are hierarchically arranged, but the hierarchical positions can be changed.

Friedmann admits that the world city hypothesis consists of loosely-joint statements. It is intended only as a framework for research and not a theory or a universal generalization about cities. Friedmann's classification of the world cities is seen as arbitrary and selection criteria are not rigorously applied. The world city analysis is

criticized of its dependence on aggregated statistical data which tend to be unreliable and give a wrong description of reality. Nevertheless, while some of his world city classifications may be debatable, his recognition of the regional articulation role played by some cities in the semi-periphery deserves credits.

2.3. The NIDOL (NEW INTERNATIONAL DIVISION OF LABOR) THEORY

While Hymer and Friedmann elaborate the global economy in terms of the spatial relationship, Fröbel, Heinrichs and Kreye (1980) discuss it in terms of the production relations. In line with Hymer's concept of uneven development and Wallerstein's theory of world system, Fröbel et al. conceive that the international division of labor has increasingly been based on process specialization between the developed and the developing countries since the 1960s. The TNCs of the First World transfer labor-intensive processes to low-cost sites in Third World countries, and import the output from these sites as inputs to the capital- and technology-intensive processes in their home countries.

The emergence of this NIDOL has been facilitated by three preconditions: (I) the development of a world-wide reservoir of potential labor power (especially a politically repressed and subjugated labor force; (II) the decomposition of complex production processes into separate and simple units of production that can be carried out by unskilled labor with little training; and (III) the improvement in transportation and communication technologies which free industrial

production from constraints of geographical location, and facilitate TNCs to take advantage of the wage differential in different locations worldwide. Consequently, a growing proportion of the world trade is composed of a flow of commodities between plants of the same company, or between contractors and subcontractors in various parts of the world. The NIDOL is characterized by an on-going process of increasing subdivision and geographical separation of manufacturing processes into parts with different labor requirements and means of labor control.

Third world countries are incorporated into the "global factory" that consists of a number of partial operations located at different sites throughout the world, and that is centrally coordinated through a headquarters' global strategy. Technology transfer is limited since only the assembly processes are transferred to Third World countries. The consequent export-oriented industrialization in these countries will not lead them out of their dependency status. The relocation of assembly processes has led to structural unemployment in First World countries.

The contribution of Fröbel et al. lies in the illustration of the concrete production relations between First World countries and Third World countries through explicating the TNC-controlled global production system (the extensive use of subcontracting and process specialization). However, this explanation is inadequate in accounting for the various changes in the global production system and relations.

The capital of NICs has succeeded in developing a horizontal division of labor with the TNCs by taking over some product lines. The capital and the state of the host economies have not been as passive in shaping their industrial development as projected in the NIDOL theory.

2.4. THESES ON THE RESTRUCTURING OF THE WORLD ECONOMY

2.4.1. The Rise of the NICs

The industrialization and economic growth of a group of countries called NICs[1] have provided a severe challenge to these theories. The attainment of economic growth together with an emergence of indigenous capital and a more equitable distribution of income are witnessed in the four Asian NICs, contrary to the prediction by the world system/ dependency and NIDOL theorists. Also contrary to the prediction of the modernization theorists, the NICs have narrow manufacturing bases and a strong dependence on export-oriented industrialization. Their industrial structure does not automatically converge with the core countries and their economic development does not lead to the development of political institutions.

The study of NICs as well as the comparison of NICs between Asia and Latin America has gained important recognition in social science fields. Studies based on different theoretical traditions such as neo-classical economics (Friedman et al., 1981), revised dependency theory ("dependent development theory" by Cardoso and Faletto, 1979), state theory (Deyo, 1987; Evans, 1987), neo-Marxist (Koo,

1987), world capitalist theory (Gereffi et al., 1990), and political economy approach (Cumings, 1987) have enriched the debate on the nature of the economic development and the role of TNCs, state, capital (indigenous and transnational), and labor of the ANICs.

The neo-classical economists argue that the NIC's economic success is a result of trade liberalization, reliance on market forces, export incentives, and appropriate exploitation of comparative advantages such as cheap labor supply. They consider state action a rational outcome of policy makers' reliance on the functioning of the market. They see no need to analyze the historical, social and political contexts in which policy-makers choose to adopt market-oriented policies.

The other perspectives, though based on different theoretical models and intellectual traditions, share the consideration of the external and internal political-economic forces in shaping NICs' development. In the case of South Korea and Taiwan, the state capacity and relative autonomy have been enhanced by their geo-political position, economic aid from the U.S. and Japanese colonialism prior to independence. The states have played a crucial role in weakening the landlords, financing the industrial development, and repressing labor movement, and cultivating a local capital. In the case of H.K. and Singapore, analyses focused on the city-state logic, the state-engineering, and extra-

economic intervention to enhance the social reproduction of labor.

2.4.2. Technological Changes and the Restructuring of TNCs

In the development paradigms, TNCs are regarded as overwhelmingly powerful in structuring Third World economies. However, the TNCs have also undergone phases of changes. The development of TNCs is categorized into four phases: (I) the "no contest" phase (1945-60), (II) the confrontation phase (1960-75), (III) the conciliatory phase (1975-85), and (IV) the cooperative "sink and swim together" phase (1985-present) (quoted in UNCTC, 1991b; see also UNCTC, 1983, 1992; Wells, 1992). The "global factory" model of NIDOL has to be brought into re-examination.

Rada (1980) posits that the advance in microelectronics and automation technology deems the cost-cutting strategy by offshore production less significant. He points out that TNCs (especially in textile, garments and electronics) shift their focus back to the developed countries and cross-investments will take place within the developed world.

Schönberger (1986) discusses the spatial re-integration of auto production with flexible automation technologies and just-in-time (JIT) principles of organization in contrast to the earlier decentralizing trends depicted by the global factory model. Such a model affects the manufacturing not only of cars but products of higher added values. The cost advantage of practicing automation and JIT system has reduced the significance of labor costs. The small share of labor

costs suggests that a more extensive spatial division of labor through offshore assembly offers no great advantage. Sayer's (1985, 1986) studies support this argument. He documents the restructuring of U.S. TNCs in semiconductor, consumer electronics and computer manufacturing. The new technologies prompt a limited amount of "de-internationalization", with the policy of using offshore location being abandoned and manufacturing being centralized in First World countries.

With technological and organizational innovations, there emerges industrial organization model called "horizontal internationalization" by Gilpin (1987), and theorized as "flexible specialization" by Piore and Sable (1984). Companies extract higher added value through production for specialized markets. Flexible specialization combines the advantages of craft flexibility with the most advanced information processing and microelectronics technology. Companies organized into flexible production systems and located near to the specialized markets are able to respond quickly to market fluctuations. Since specialized markets concentrate in First World countries, the shift to low wage sites will not occur on the scale once expected.

Companies increasingly emphasize their technological superiority. The astronomical costs of R&D have forced companies to seek strategic alliances with their competitors for joint R&D. This has given rise to the emergence of TNC galaxies or systems based on the cooperation in R&D on core technologies and complementary assets, to better utilize the

capabilities of the TNCs (UNCTC, 1991). The TNCs will increase their investments in First World countries rather than in the rest of the world.

However, according to Sanderson (et al., 1989), the TNCs do not necessarily relocate back onshore despite the availability of automation technologies. Some companies do relocate some of their assembly lines back to the U.S. from Asia. Nevertheless, statistics show that Third World countries are playing an increasingly important role in assembly and manufacturing for TNCs. Sanderson et al. conclude that manual assembly is still cost-effective for less sophisticated products of low volume. But flexible assembly begins to show lower unit costs than manual assembly once the volumes exceed certain units. The availability of parts and transportation costs rather than labor costs has greater impacts on unit costs of flexible assembly. Countries which have abundant supplies of substantive raw materials and largely untapped markets will attract automated operations of TNCs. But automation will mean more unemployment.

The UNCTC (1987) report indicates that automation has not been widespread in offshore assembly of consumer electronics such as TV, since the defeats can be repaired at relatively low costs. Contrary to certain early prognoses, assembly automation does not result in a massive phase-out of offshore production. In the semiconductor industry, TNCs transfer the final testing (other than assembly) to their subsidiaries in

the developing region so that the products can be efficiently shipped to the regional customers.

According to Ernst (1992), automation will not drive TNCs to relocate their operations back to First World countries. Firstly, as automated machines are expensive, they are cost-effective only in a 24 hour cycle based on a multi-shift and seven-day/week work schedule. Countries with minimum labor and environmental regulations, are ideal testing grounds for practicing automation. Secondly, a rapid retreat to a less internationalized mode of electronics manufacturing involves substantial costs in closing down existing plants and re-shuffling supply and market networks. Thirdly, NICs display a sufficient supply of low-cost engineers, technicians and skilled workers for automated operations. Automation will reduce the employment of unskilled labor, but increase the employment of skilled labor.

The increasing use of automated technologies in the electronics industry is likely to take place in a small group of industrial growth poles. The NICs, with certain specialization of consumer electronics and the availability of component bases and engineering skill supply, are likely to attract automated operations of electronics manufacturing and simple design processes. The Philippines, Thailand, Indonesia, and China will continue to carry out low value-added assembly processes. These are first signs of a new hierarchy in the global production system. Ernst (et al, 1992) points out that the "differentiation of mass production"

(rather than "flexible specialization") and the shift to product design and market development capabilities have become the dominant trend among electronics companies in First World countries. The ANICs are still badly equipped to catch up with this trend. Many electronics companies in the ANICs, so far, fail to upgrade their technological and organizational capabilities to cope with the new competitive environment and thus remain dependent on fairly obsolete technology and marketing methods. In addition, they still rely on First World countries for the supply of critical components. Southeast Asian countries' electronics production remains overwhelmingly labor-intensive. Electronics exports are heavily dominated by wholly foreign-owned subsidiaries, with the participation of local companies limited to a subordinate role of suppliers of non-critical components and services to foreign companies.

Mody (et al., 1990) argues that the internationalization of production persists. While automation creates incentives to move assembly processes back to the U.S., the American employees of many companies have "forgotten by not doing" assembly. Japanese companies that relied on automation in their production have lost confidence in their ability to compete by depending on only automated technology since the Yen shock of 1985-86. It is evident that many corporations are relocating offshore.

Deinternationalization, continued internationalization and various forms of adaptation of the TNCs are coexisting,

4.3.

depending on the industry, companies, and the governments of the host country and home country. Some generalizations can be reached: the search for markets, skilled personnel and component supply rather than simply cheap labor and land supply are increasingly important in TNC's global strategic planning.

2.4.3. A Refocusing on Regions

Hill (1987, 1990) alerts us that the "global factory" model oversimplifies and overgeneralizes the diversity of corporate strategies and the resultant spatial implications. He synthesizes three parallel trends of corporate restructuring-- vertical internationalization (global factory), horizontal internationalization (Gilpin, 1987) and the triad (Ohame, 1985)-- into a "trilateral" model of international division of labor. This is based on

> an intersecting, tri-regionally organized, tiered production system. The upper, higher value tiers of the production system are organized in concentrated, company town complexes in the wealthy triad core nations... The lower value bottom tiers of the production system as well as the mass production of low priced, standardized vehicles are spread among NICs and poorer nations in the periphery of each Triad power according to a regional sourcing strategy: principally in Latin America for North American transnational firms; in East and Southeast Asia for the Japanese multinationals; and in Africa and the Middle East for Western European global companies. Considerable cross penetration continues among the Triad core powers ... (1990: 13-14).

According to the UNCTC reports (1991a; 1992), regional economic integration is consistent with the emerging strategies of TNCs to build regional core networks of

affiliates centered upon their home countries. The foreign direct investment-led (FDI-led) regional integration creates pressures for the emergence of regional policy frameworks. It is unlikely that policy-led integration will bring about a unified regional economy without FDI-led integration at the production level. FDI-led integration is not confined to a regional context only, but may, increasingly, extend to the multilateral level. For instance, TNCs from the EC have invested more in the U.S. than in other EC countries, while Japanese TNCs invest more in the U.S. and EC countries than in Asia. Regional blocs are competing with each other. For example, NAFTA can attract FDI not only from the U.S. and Canada, but from European and Asian countries. The agreement provides non-U.S. TNCs with an important incentive to build an export capacity in Mexico, since it will assure long-term, duty-free access to the U.S. market. Recently, several electronics companies were reported to have planned to relocate their production plants from China to Mexico to take advantage of the NAFTA (CNN World Report, 1995).

Fujita (et al., 1991) studies the global dispersion pattern and spatial reorganization of 14 electronics TNCs from Japan, South Korea and the U.S. during the past two decades. During the past 15 years, the nine Japanese companies have increased their new production plants more rapidly overseas than in Japan. Most of the new plants are located in East Asia, North America (mostly in the U.S.), and Europe. The share of East Asia has increased recently, while that of North

America and Europe remained rather stable, and the share of the rest of the world has been decreasing. Most of their overseas plants are of mass-production type, while new plants in Japan include both trial-production plants and mass-production plants. The two Korean companies start increasing their overseas production in Thailand and the Philippines during the past decades. R&D has been heavily concentrated in the U.S., Japan, and European countries.

The global factory model is criticized in a number of recent studies in the internationalization of electronics production. Scott (1986) argues that the NIDOL no longer consists of a simple bipartite split between the economies of the capitalist core and those of the world periphery. Rather, it has evolved into a complex spatial system with many different hierarchical levels and sub-regional articulations. New rounds of growth centers, electronics proletariat and skilled scientific workers have emerged. Scott illustrates the tier-relationship between the TNCs and locally-owned large assembly houses in the ANICs and Southeast Asian countries.

Yamada (1990) argues that the division of labor taking shape in Pacific Asia differs in important ways from the historic one based primarily on the need to tap reserves of cheap labor. The regional market has been weighing more heavily in Japanese companies' investment strategies. The competitive environment compels the Japanese companies to invest in R&D leading to product differentiation from low-end products of simple functions to high-end products with

differentiated functions. The production of low-end products have been taken over by the ANICs. Japan, the ANICs and Southeast Asian countries have been moving toward a multi-layered structure based on both vertical and horizontal specialization.

Chalmers (1986) studies the electronics industry of Singapore and the other ASEAN countries. He sees that Singapore and the other ASEAN countries are both competitive and complementary in their electronics industrial development. Many TNCs have set up skill-intensive production and regional headquarters in Singapore, and relocated the labor-intensive production from Singapore to its neighboring countries. Whether the industry in the region can move toward greater homogeneity as operations in different ASEAN countries are automated, or whether the existing differences become more marked, will depend on the political decisions shaping the policy environment in which TNCs operate.

Parsonage's (1992) research on the integration of Singapore--Johor (Malaysia)--Riau (Indonesia) reveals a view similar to Chalmers'. Parsonage points out that a division of labor implies dependence and thereby a political relationship-- similar to a core-periphery relationship discussed in the dependency paradigm. Singapore lacks the characteristics of a "traditional" core but has emerged as a regional center of capital and economic power to its neighbors (see also Carlsson and Shaw, 1988). The emerging ANIC-ASEAN relationship in general may either enhance the dependence of

Southeast Asian countries on external capital and technology or translate the present dominant/dependent relationship to a more equitable relationship, and this will depend on political decisions of the states within the region.

The potential for an equitable relationship stems from the view that the ANIC capital uses technology more appropriate for Third World countries than the global corporations, and both the ANICs and ASEAN confront the common protectionist pressures and "regional Japanese economic hegemony" (p.315). Parsonage, however, argues that the ANICs may not be more generous in transferring technology than the Japanese and U.S. companies given their dependence on Japanese technology and restructuring difficulties (see also Bello and Rosenfeld, 1990). Furthermore, the relocation of ANIC-supporting industries may hinder the development of local supporting industries in Malaysia and Indonesia.

Whether the economies of Malaysia and Indonesia will benefit from the integration in the Growth Triangle (GT) depends on the nurturing of linkages with foreign manufacturing investments beyond the supply of cheap labor. Singapore with its access to cheap labor in the GT, has worked to attract TNCs to establish higher value-added processes. Parsonage points out the negative social and economic impacts of the economic integration--the high inflation in Johor and Batam resulted from an influx of Singaporean property investment and tourism. The economic inequity within the GT has aggravated not only between classes but between ethnic

groups. A growing number of affluent ethnic Chinese Singaporean managers are building "second homes" in Johor and Batam. The alienation of workers in Johor and Batam from their mainlands is in a manner similar to the workers in Shenzhen SEZ from the rest of the China.

The development of the GT corresponds with significant ANIC investments in ASEAN, according to Parsonage. The external "Chinese" capital represented by Singapore and H.K., and the internal Chinese capital has been gaining importance within Malaysia and Indonesia. This observation is supported by various recent studies on the Chinese capital as a new global power base (Kao, 1993).

Bello and Rosenfeld (1990) suggests a pathway of regional integration led by ANICs as a counterweight to Japanese and U.S. economic dominance. However, they are critical of the existing strategies used by the ANICs in integrating their periphery. They comment that the strategy of relocating to low-wage sites and using foreign workers will lead to social instability in both the periphery and the ANICs in the long run. They urge for developing equitable associations to facilitate fair trade and appropriate technology transfer, as well as labor and environmental protection. The ANICs should reduce their dependence on the U.S. and Japanese markets and develop intermediate technology suitable to their neighboring countries. They should also make use of regional resources. For example, South Korean manufacturers should employ Filipino engineers to strengthen their technological capacity; the

Filipino engineers have alternatives other than serving the U.S. companies. In order words, they are advocating south-south cooperation.

2.4.4. The Rise of the NIC-capital

In NIC-capital led regional economic integration, the key unit of analysis has been the TNCs of the NICs (or named as the "new" TNCs) vis-a-vis those of First World countries (the "old" or "traditional" TNCs). Kumar's (1981) edited book has a collection of research on the related issues. Wells states that the new TNCs possess technologies that are multi-purpose and labor-intensive. They do not require big capital outlay and are capable of utilizing locally available inputs. Ting and Schive present case studies of two Taiwanese TNCs and the findings confirm Wells' formulations that ANICs' technologies are more appropriate to the recipient countries. Lecraw's research findings (based on 23 subsidiaries of NIC-TNCs in ASEAN region), indicate that the new TNCs, as compared to the old TNCs, are smaller in size, deploy more labor-intensive technologies, import fewer inputs, have greater local equity participation, and are perhaps more profitable. These new TNCs manufacture unbranded, low-quality products. They compete on price and the products are more suitable to the needs of the consumers. Most of these TNCs have simple organizational structures, and enjoy the advantage of low management and technical costs as compared to the First World transnationals.

Kumar concludes that the home countries of the new TNCs can derive certain economic benefits from the foreign operations of their national capital. They increase foreign exchange earnings for the home country through the supply of machinery, equipment and related services.

The discussion is followed up in another collection of essays by Khan (1986). Wells' study of 602 manufacturing subsidiaries of the new TNCs illustrates that they invest mainly in the form of joint ventures, while the U.S.-TNCs invest mostly in the form of the wholly foreign owned subsidiary. He analyzes that the new TNCs do not have specialized technologies in their subsidiaries, and therefore do not need to centralize their decisions and avoid local partners in ownership arrangements. With small capital, they spend little on advertising and their products do not have well-known trade marks. They lack an adequate access to local distribution channels, and therefore prefer to establish joint ventures with minority shares. The relative autonomy of each local subsidiary allows the interests of local and national markets in their production and marketing decisions. Local partners' knowledge of local conditions, as well as their access to distribution channels, capital, management and political connections provide some additional advantages.

Khan points out that the willingness to accept lower equity participation in the host countries, a local-market orientation, and the more polycentric character of their managerial approach render TNCs more relevant to the

development needs of the host countries. These characteristics generate favorable attitudes in the host countries which want to exercise economic and political control over their national resources (see also Panglaykim, 1979). The sympathetic attitude of the new TNCs may be partially related to the common historical experience in terms of cultural and ethnic kinship. Khan asserts that a more congenial working relationship between the new TNCs and the host countries can be worked out in contrast to the contentious relationship existing between the old TNCs of the Third World governments.

Sabri-Abdalla (1980) argues that the new TNCs can promote economic and technical cooperation among developing countries and make a significant contribution to their development. They can establish economic complementarities among developing countries--discovering new areas of inter-linkages, pooling their resources, and extending the economics of scale through larger scales of production across the borders--thus imparting a new dynamic to the development process in the developing world. Through the capacity to facilitate the flow of capital, technology, management and marketing skills to Third World countries, the new TNCs can assist in removing serious bottlenecks in the developing process. The new TNCs can play an instrumental role in facilitating the developing countries to specialize in viable sectors and specific products, and in benefitting from resource complementarities. Through the establishment of larger and more efficient production bases

for export, the new TNCs can increase the share of developing countries in the world's total trade and manufactured output. All these possibilities facilitate the establishment of a viable base for the formulation and implementation of alternative development strategies towards greater self-reliance in the developing world.

2.5. HONG--GUANGDONG INTEGRATION

Studies on the H.K.-Guangdong integration do not conform to the above-mentioned studies about the impacts of the new TNCs. Chai's study (1984) assesses the impact of H.K. companies in the SEZs. His findings indicate that the job creation effect is limited. The technology transfer is low judging from the age of technology and equipment. The effectiveness and intensity of technology transfer are low since the inter-firm relationship is loose and temporary, and the H.K. partners do not care whether their Chinese partners can effectively apply the technology and know-how. The range of know-how transferred is restricted to production, to the exclusion of marketing or design and development. The forward and backward linkages of these investments are obvious: their inputs are acquired mainly from H.K. and their outputs are sent directly to H.K. for export. He argues that China cannot rely on H.K. and overseas Chinese to achieve its modernization goals. It also implies that, at least in the near future, China's threat to H.K.'s competitiveness in overseas export markets is largely unfounded.

Smart and Smart (1992) reveals that the H.K. managers tend to rely on a reciprocal exchange relationship called "Guanxi" in managing their operations in the SEZs. "Guanxi" means "relationships or social connections built on pre-existing relationships of classmates, people from the same native-place, relatives, superior and subordinates in the same workplace, and so forth, incorporating them into its own operation (Yang, 1988: 411). H.K. investors often opt for social connections to facilitate the negotiation process for a contract and to solve the problems after the establishment of ventures, rather than following the regulations and dealing with the central authorities.

That the H.K. investors tend to engage in small-scale investments has little to do with financial power but strategic thinking. To get approval of projects involving large-scale investments usually takes a long time and risks being bogged down by the central authorities. To circumvent such risk, investors set up a number of individual units, each responsible for their own activities so that any delays in one will not affect the whole development. Smart and Smart called this strategy "guerilla capitalism"--a strategy to reduce the economic risk associated with the problems of doing capitalist production within a socialist country. This strategy reinforces the functioning of the "gift economy"--an exchange of favor between investors (through giving gifts) and the authorities (providing favorable conditions).

Kleinberg (1990) made a concise summary of discussion over the impacts of traditional transnational capital on China. He alerts the readers that a conclusion on the economic impacts of the TNCs is premature as the situation is constantly changing. Many Chinese statistics are unreliable. Many researchers have gradually shifted from examining the volume of foreign investment and foreign exchange earning to issues about the quality and usefulness of these investments to China. Issues of technology transfer, skill formation and regional equity have become more important.

The Western Marxist critique of TNC's displacement of indigenous production does not apply to China, since the state has effectively intervened to protect the perceived national interests, and does not grant licenses to sell to most of the TNCs. The TNCs which have obtained licenses to sell in the domestic market usually offer badly-needed consumer goods otherwise in short supply, or import substitutes. State hiring quotas for educated and skilled workers restrict joint ventures from attracting skilled workers and managers away from local companies. The fear of neo-Marxist that TNCs will foster a local elite in the host country while manipulating consumer tastes has little foundation in China. Wage differentials among companies are small, and the percentage of Chinese workers hired by foreign capital remains small.

Kleinberg points out, instead, other critical issues. How does one assess the extent of technology and technical training provided by foreign investments? What is "high"

technology and what is "appropriate" for China? If the level of technology brought in is too advanced or capital-intensive, the labor force and economic structure cannot adapt to it. Reports on foreign investment in China has mixed implications about these issues. Overall, the results are not spectacular.

According to Kleinberg, foreign investment has developed China's human resources, since workers and mangers are exposed to advanced production equipment. The training of at least a part of the workforce, and making adaptation to new techniques are urgent economic needs. The Chinese state does, however, face economic costs of regional inequality, concentration of both domestic and foreign capital in urban commercial sectors, and a possible net outflow of capital. In this aspect, what the neo-Marxist critics say about foreign investment can be applied to China.

Sklair (1987, 1991) examines the development of Shenzhen SEZ since the mid-1980s. He discusses the effects of TNCs: the industrial linkages are meager; foreign exchange is low; and technology anchorage is problematic (Sklair, 1987). He points out that the massive use of migrant labor by transnational capital has led to a "temporary urbanization". Whether the workers are exploited is hard to say. In an objective sense, this may be true. But in a subjective sense, workers are reported to be voluntary to work very long hours to earn extra H.K. dollars. Sklair thinks, "It is important to be neither moralistic or ethnocentric about this" (1992: 205).

Some studies focus on exploring the relationship between H.K.-Shenzhen (and/or Guangdong). Industrialists argue that H.K.'s manufacturing base has not been weakened with the intensifying industrial relocation. The export-competitiveness of H.K. manufactured products has grown. The plants remaining in H.K. concentrate on product design that yields a higher added value than the labor-intensive manufacturing (Hong Kong & Macau Economic Digest, 12/89; H.K. Economic Daily, 5-3-93; 7-16-91). Shenzhen has been important to H.K. since it helps alleviate the labor shortage problem. H.K. can develop its service industries while at the same time keeps its control over the manufacturing industries, and the two sectors can actually play complementary roles to each other. Without a low-cost offshore production base, it is difficult for H.K. to maintain its position in world trade as a major supplier of consumer goods. Shenzhen and the Pearl River Delta areas help H.K. manufacturers solve recruitment problems and, more importantly, cut costs.

Some argue that Hong Kong can take advantage of the complementarities with China to upgrade its industries toward skill-intensive manufactures (Sung, 1985). Hong Kong's economic setting and entrepreneurial skills are well-suited to commercializing China's existing technology. Despite its economic backwardness, China has a large industrial system and relatively advanced research in industrial basics including industrial electronics and basic industrial engineering (Ho, 1992). Hong Kong manufacturers can make use of Chinese

engineering labor to improve their design and development capability.

However, the assumption of H.K.'s commercialization of China's science and technology is considered naive (Ng Ka Wai, the Chancellor of the H.K. Science and Technology University). Very little cooperation has taken place since the open door policy. The birth of a new product requires basic research, applied research, design, model testing, mass production, industrial packaging, commercial packaging, and marketing. China and H.K. are good at the front end and back end of these processes respectively. Both have not devoted resources in the processes between. It will still take a long time for the two to be able to cooperate (Min Pao, 3-3-94).

Chan (1988, 1991) looks at industrial relocation in the context of regional economic integration and the impacts on both cities. He examines the macro-data about the H.K.-Guangdong development. He concludes that the industrial relocation has caused structural unemployment in the manufacturing sector in H.K. Industries have been moved out of H.K., and the city is becoming a commercial city depending on service production and increasingly vulnerable to global market fluctuations. The outprocessing of labor-intensive manufacturing is unlikely to contribute to the development of capital and technology-intensive industries that Guangdong aims to establish.

Some commentators point out that the manufacturers based in H.K. would rather relocate north across the border to

continue their labor-intensive production by means of obsolete machinery, than venturing into new areas, upgrading technology and improving productivity (HKFI, 1992; FEER, 4-17-1989; Chan, 1991b). Hong Kong's export manufacturing will have to compete with that of China when China absorbs advanced technology and obtains foreign contracts through H.K. (see Ho, 1992; Chan, 1991b; Oborne, 1986).

Other critics argue that Shenzhen has been able to attract foreign investments mainly from Hong Kong. It will hardly be able to weaken H.K.'s competitiveness and will simply become an industrialized hinterland or a "colony" of Hong Kong (Leung et. al, 1986). Whether H.K. and Shenzhen complement or compete with each other depends on the restructuring of manufacturers and the political decision of both governments. This will be examined in this research.

3. RESEARCH QUESTIONS, METHODS AND PROCESS

This dissertation evaluates the H.K.-Shenzhen regional division of labor through a study of the restructuring of electronics manufacturers based in H.K. The concerns are articulated in the following three research questions.

3.1. RESEARCH QUESTIONS

(I) How do electronics companies based in H.K. restructure their investments with the opening of Shenzhen SEZ?

(II) What are the impacts of the restructuring on both cities?

(III) What is the industrial and socio-economic relationship between the two cities and which pathways are they taking?

The restructuring of electronics companies is not uniform. How do manufacturers restructure their investments? Who stays and who relocates? How is the decision related to the structure of capital, the kind of products produced and the production technology, etc.? For those who relocate to Shenzhen, how do they structure their investment, in which form of contract and scale of production, and why do they do so? In this research, I shall explore a variety of strategies undertaken by manufacturing companies, the rationale behind and the consequent practices.

The impacts of restructuring on H.K. are mainly concerned with the change in the structure of the economy, employment and technology. On the economy, I focus on industrial

relocation and the degree of deindustrialization. On employment, I examine the changes in the size of manufacturing workforce and the nature of jobs. On technology, I shall find out if H.K. manufacturers have improved the quality of their products and advanced into higher value-added production.

Any single electronics product is composed of hundreds or even more than a thousand parts and components, the production of each requires various capital, technology and skill inputs. A computer comprises of a motherboard, add-on-cards, a keyboard, ICs, cables, etc. A company producing ICs, especially those of the newest generation, invests heavily in R&D, precise machines, and skilled engineering labor, and adds high value to the products. A company assembling motherboards basically involves the purchase of ready-made parts and merely assembles them. The assembly requires more standardized machines, lower skill and smaller capital inputs, and add lower value to the product. The numerous electronics products can be conceived to be in different positions in a value-added continuum. The production of high definition TV is on a higher end than that of a color TV, the production of which is on a higher end than that of a black and white TV.

Developing countries began with performing lower value-added production for global corporations. Gradually, the national capital obtained production experience and tended to provide more capital, technology and skill inputs to penetrate the higher value-added product markets. They manufactured the

whole product rather than just a part, and usually supply on an OEM (original equipment manufacturing) basis to global corporations. Over time, some may even develop their own brand name (OBN) products, by designing and developing new models and products. This is witnessed in the electronics development of the ANICs. Developing countries have been overwhelming dependent on the supply of high value-added components for their low value-added production. They try to move up along the "value added production ladder" to manufacture ICs and other critical components and parts, and aim at producing their own brand name products in order to compete in global markets, to earn foreign exchange and to maintain a positive trade balance (Hill & Lee, 1994).

To increase the added value of products that a society produces is "universally" recognized as a way to improve the standard of living of that society. Certainly, only through a more equitable distribution of income can a society trickle down the benefits arisen from economic growth. In this research, I shall examine to what extent H.K. has moved up in the value-added production ladder.

Regarding Shenzhen, my concerns surrounds the employment structure, technology transfer and industrial linkages. Technology has been the subject of a broad range of definitions[1]. In this context, technology is considered to be the machinery and knowledge necessary to implement a manufacturing process.

Chai (1984) and Kleinberg (1990) provide useful criteria to assess the issue of technology transfer. The first is the type and age of technology. The second is the range of technology (production skill, marketing, design and development). The third is the effectiveness and intensity of the transfer. Transfer is likely to be more effective and intense if the inter-firm relationship is a long-term one, and if the technology giver is eager to see that skill is properly mastered and applied by the recipient partner. Kleinberg (1990) raises the important question of "appropriate technology". Do foreign companies adapt their technology to relative factor prices, market size and customer tastes? What kind of adaptation (in terms of materials, product design, equipment, and manufacturing methods) do foreign companies make? To what extent are they capital-intensive?

Regarding the employment structure, Sklair (1987, 1991) and UNCTC (1991) discuss important dimensions including jobs creation, the use of temporary labor and migrant workers, sex ratio, job nature, wages and welfare, and work systems.

"Linkages" refer to "the share of imports (backward) and the share of exports (forward) of a company's product that come from and go to the host economy" (Sklair, 1987:8). Backward linkages include the use of local components, raw materials, and services, and forward linkages include sales to intermediate goods industries within the host economy.

The nature and organization of linkages between foreign companies and local companies, and the costs and benefits of linkages should be examined (UNCTC, 1991b). Benefits include the provision of technical assistance, information on raw material sources, financial aid, assistance in quality control and inspection techniques, and general managerial and administrative support from the contractor. Costs include possible negative effects arising from the control exerted over subcontractors by the contractors.

To answer the third research question, I shall examine specifically the regional relationship reflected in the production linkages and the control of capital and management, procurement, marketing, land and labor resources in the electronics industry between the two cities, and generally the economic and social influence of H.K. over the SEZ. I shall examine the pathways of the region in the political-economic context strongly shaped by the China factor.

3.2. RESEARCH METHODS

3.2.1. Case Studies of Electronics Companies

The industrial integration between H.K. and Shenzhen has taken place for only 15 years. Most of the requisite information is still in the hands of the entrepreneurs, and has not been made public in the quantity and detail enough for rigorous research. In addition, public official statistics of Shenzhen and China about specific industries and branches within an industry are limited. The "progress" is reported

but the problems are rarely disclosed in official publications. Investors often do not compile with Chinese law and regulation and the malpractice is often tolerated by local authorities. To get an overview closer to the reality, I choose to interview manufacturers directly.

Most surveys using mailed questionnaires have got extremely low response rates (Thoburn, et al., 1990). For example, in a survey of the industrial cooperation between H.K. and China, 1,500 questionnaires were sent out to survey the members of the Federation of Hong Kong Industries. Only 38 members responded, of which only 20 were positively identified as having industrial cooperation with Chinese companies (Chai, 1984). A mailed questionnaire is effective in collecting information and opinion in brief from the respondents, since most respondents are not willing to spare time to answer open-ended questions. Face-to-face interviews with manufacturers serve the best to get an insider's experience and perspective.

3.2.1.1. Sampling

The sampling of companies for the research is based on the following four criteria. The characteristics of the case studies conducted in this research are summarized in Table 1.

Table 1: Major Characteristics of the Case Studies

Location	Capital-Intensive	Labor-Intensive
HK	2 (G)	0
HK/SEZ	0	2 (G)
SEZ	1 (HK)	9 (1G & 8 HK)

Forms of Contracts		
WFO	EJV	CJV
7	3	2

G: Global corporation HK: Hong Kong company
WFO: wholly foreign owned venture
EJV: equity joint venture CJV: cooperative joint venture

(I) The factor intensity of production

Concerning the complexity of production, the electronics company can be characterized roughly by two categories:

(i) Companies producing end products such as PC's, add-on cards, radios, TV's, transformers, and converters, etc.: Manufacturers can purchase most of the components in the component market. The assembly of the end product is carried out largely by low-skilled workers. This category is identified as labor-intensive production.

(ii) Companies producing ICs (memory chip, CPU, ASIC) and other discrete devices:

The development and production of ICs, especially those of the newest generation (16 Mbit memory chips, 32 bit microprocessors) involves a high level of integration on one chip. This implies high development costs, and demands very precise machines and a high standard of cleanliness in the

production. This category is identified as capital-intensive production.

For a better comparison of these two categories, I shall briefly give an example of the production process of each.

(a) The production of a motherboard involves the following processes (H.K. Legend publication 1994):

- inspection of incoming materials
- surface mounting: the mounting of the parts designed for surface mounting on the circuit board. This is a highly automated process, since a single machine can mount many different parts at a very high speed.
- component insertion and soldering: a manual insertion of all other components onto the circuit board for soldering.
- cleaning
- testing
- dynamic burn in: the burning in of the circuit board by 40 degree for 2 hours
- final testing

In this production process, only the surface mounting is highly automated, and the rest needs mainly low-skilled workers for assembly production.

(b) The production of an IC involves:

- circuit design and mask fabrication
- wafer manufacturing
- wafer processing
- assembly
- final testing

Circuit design needs highly skilled engineers who can use CAD (computer-aided design) to achieve a high integration of circuits on one chip. The layout is then copied on a mask, which is used in the photolithographic process.

Wafer manufacturing involves the "growing" of a silicon crystal which is then cut into wafers, nowadays mostly 8 inches in diameter. Most companies simply buy the wafers, since only a few companies can produce very pure crystals.

Wafer processing consists of photolithographic processes, which copies the layout of the masks onto the wafer. This process consists of many steps, each requiring a highly precise control of positioning and other process parameters under clean room conditions. Therefore, this process is the most capital-intensive of the whole production.

Assembly is the process with a comparatively low requirement of skill and precision since it involves mainly the cutting of wafers into chips which are then bonded to carriers and packaged. Nevertheless, most large companies deploy highly automated machinery nowadays (Henderson, 1989; Yager 1991).

In the capital-intensive production, I shall examine the semiconductor manufacturing. It is comparatively well documented. H.K. has a small local production complex and quite some companies cluster in a recently developed high tech zone. In the labor-intensive manufacturing, I find it unnecessary to focus on a particular product since their

production technology and cost dynamics are similar. Instead, I pay attention to other criteria listed in the following.

(II) the location strategies

The different plant location strategies adopted by electronics manufacturers include: (i) setting up production in Shenzhen SEZ while maintaining a part of the manufacturing in H.K.; (ii) relocating the production completely to Shenzhen and keeping only managerial and design operations in H.K.; and (iii) maintaining production in H.K. without relocation.

(III) the structure of capital

The impacts of corporate restructuring are perceived to be different. H.K. companies and the subsidiaries of global corporations are generally different in size[2], technology deployed and position in the global subcontracting system. The H.K. manufacturers have smaller capital and do not have their own marketing channels. They work as OEM suppliers or subcontractors to local and global corporations. They are more vulnerable to market fluctuations due to their dependence on the orders of their contractors. However, they constitute the largest investing group in both cities. The subsidiaries of global corporations have more well established procurement and marketing channels. They are on the higher end of the global subcontracting networks. It has been the global corporations rather than the small-medium H.K. companies that the Shenzhen authorities aim to attract.

(IV) the form of contract undertaken in Shenzhen

The wholly foreign owned venture, equity joint venture and cooperative joint venture are referred collectively by the Chinese to "san ci" ventures; "san ci" literally means "three (kinds of) investment". The remaining arrangements are named as san lai yi bu; the "yi (one) bu" refers to "compensation trade" and "san (three) lai" refers to three kinds of processing and assembly contracts, of which "lai liao jia gong" (bringing materials for processing) has been the most common form of investment[3]. Compensation trade[4] has declined in importance and that will not be discussed in this research.

The processing and assembly arrangement was the most popular form of investment in the early 1980s but later rejected by the SEZs because it was considered not sufficiently conducive to technology transfer and long term investment. Some manufacturers had processing and assembly investments in Shenzhen SEZ but were pressurized to change the investments to "san ci" ventures.

The wholly foreign owned ventures ("duzi jingying") have been rare in China till 1988. They have been restricted to "advanced technology" and "export-oriented" projects, and till 1986 were found only in the SEZs in Guangdong and Fujian, and in Shanghai. The Chinese partners in joint ventures suffered from a shortage of fund owing to the central government's tight credit policy of autumn 1988. To overcome this difficulty, the government has been trying to promote the wholly foreign owned ventures (Thoburn, 1989).

The equity joint ventures ("hezi jingying") have increased considerably in importance since the early years of China's open door policy. They are the only form of foreign investment in China which is guided by a relatively detailed legal framework. Foreign partners must contribute a minimum of 25% of the equity, and most contracts last for 10 to 20 years.

The cooperative joint ventures ("hezuo jingying") are extremely flexible. The Chinese side can contribute only nominally, leaving the foreign partner to run a virtually 100% foreign venture without the limitation of the normal 10-year limit on such operations. The approval of a cooperative joint venture can be granted at a much lower level of authority than that of a wholly foreign owned venture.

3.2.1.2. Data Collection

The questionnaire contains structured and open-ended questions (see Appendix A). The questions cover:

(I) production organization,

(II) technological investment,

(III) industrial linkage,

(IV) employment structure, and

(V) assessment of the region

A structured questionnaire has the advantage of confining the interview to certain directions and collecting the same set of information from all respondents for further comparison. The open-ended questions allow respondents to elaborate their areas of interest and concern. The open-ended

questions are designed to let respondents express their opinion and reveal their business practices in depth.

The experience of the H.K. research community reveals that a researcher simply selecting potential interviewees at random from a published list of investors is likely to get a low response rate. Interviews, in practice, have to be prepared in advance through personal contacts. The global corporations have public relations department but the H.K. small-medium companies may not have. Moreover, it is easier to arrange interviews with the management of the branch plants in China than that of the headquarters in H.K. (Thoburn et al., 1990).

To arrange interviews, I was advised by the academicians to: (I) mail a short letter introducing the project and the purpose, and enclose a short list of questions summarized from the questionnaire; and (II) call the management directly to confirm the receipt of the letter by the management, and to seek for acceptance of interviews.

However, through a discussion with a few acquaintances working in the industrial and commercial sector in H.K., I confirmed that this method would not work. Very often the management receives questionnaires and requests for interviews by both academic and research organizations, and they tend to ignore most of them. The response rate is likely to be very low. The effort of printing and mailing questionnaires may be largely wasted.

Instead, I started to review popular trade magazines such as MEI Electronics, Asian Electronics, etc. in which many H.K. companies advertised their products. The advertisements contain descriptions of product features and some even print the addresses of their China operations. Through this review, I could easily identify whether a company had a factory in Shenzhen or in China. I then checked the information of these companies in the industrial and commercial directories which provide updated profiles of companies (turnover sales, number of staff/workers, capital, product range, etc.).

When I made initial telephone contacts with the identified companies, I expected that I would encounter rejections if I exposed my identity as a researcher affiliated to a university. Instead, I began with: "I have reviewed the advertisements of your company in Magazine XX and would like to enquire about the products. Could you please direct me to your managing director?" I obtained referrals in most cases immediately. When I spoke with the managing director, I reviewed my identity and enquired briefly about the company's products and the locations of overseas production. If a company had an operation in Shenzhen and produced the products in line with my research, I would enquire about the possibility of conducting a personal interview.

I found H.K. manufacturers mostly cooperative. The key was how to bypass the secretaries and to get direct contacts with the management. The secretaries tended to see social science research as irrelevant to their time-conscious bosses.

Instead, the management were rather receptive to my request provided that the interview would be conducted at the time and place (their offices) convenient to them and it would not last longer than 30 minutes. But most of them were very cooperative and each interview and follow-up interview lasted for at least an hour and 30 minutes respectively. Two interviews lasted for two to three hours and one ended up 5 hours (interview continued during lunch in a restaurant)[6].

Another method to get positive response to my request for interviews was developed right on the site. H.K. manufacturing companies are located in high-rise industrial buildings. In the same building, I often found 5 to 6 electronics companies listed in the directory of the building. Paying personal visits is useful in getting positive responses.

A university affiliation provides me a base to contact the managerial personnel, though it can be an obstacle in dealing with secretaries. The Center of Asian Studies at the University of Hong Kong is rather well-known in the H.K. community. Many of the managers in the electronics industry have had college education in electrical engineering and knew English. Two even expressed that they welcomed "intellectuals".

Moreover, I found that many of the managers were not in town from Friday to Monday, since many visited their factories in Shenzhen. The foreign-invested factories in China mostly operate at a 6 or 7-day schedule while H.K. offices and

factories are closed on Sunday and maintain half-day operations on Saturday. Many managing directors take off to supervise their China factories. Many have weekly meetings on Monday morning. I learned that the chance of getting in touch with the manufacturers was higher during Tuesday to Thursday.

When the products and factory locations of a manufacturer did not fit in with my criteria, I did not immediately give up. I shifted to request short telephone interviews (some lasted for 30 minutes) or personal interviews when the managers sounded helpful and friendly. I did two telephone interviews before starting my research. These pilot studies helped me refine the questionnaire. I did 3 personal interviews and 3 telephone interviews with manufacturers operating in the Pearl River Delta cities (mostly in Dongguan and Ping Wu). Many of them had moved their processing and assembly investments from Shenzhen SEZ to the existing locations, because the authorities no longer welcomed processing contracts. These interviews broadened my understanding of the changing spatial shift of labor-intensive industries from H.K. to Shenzhen and further north.

Other than telephone enquiry, I also relied on personal contacts. The advantage of resorting to personal connections was that the management had more trust in me right from the beginning and were willing to reveal more inside information. I conducted my research in a slightly sensitive time--before and after the first court hearing against the H.K. management of Zhili Toy and Craft Company whose operation in Shenzhen had

been on fire on 19 November 1993, killing 81 workers. I was told that it would be rather difficult to approach Shenzhen officials and manufacturers operating in Shenzhen as a researcher based in H.K. Therefore I relied on my personal contact, a police officer, who helped me identify two manufacturers and arrange factory visits in the SEZ.

To my surprise, the management of the subsidiaries of global corporations were less willing to accept interviews than those of H.K. companies. Sanyo Electric H.K. is an exception. The highest personnel of Sanyo Electric H.K., the Chairman and President, accepted my interview at an hour's length without requesting a letter or a questionnaire prior to the interview. He introduced me to visit Huaqiang Sanyo (an equity joint venture between Sanyo H.K. Electric and Huaqiang Co., a Chinese state company) in the SEZ and to interview the General Manager. In the case of the Western companies, I was requested to send my questionnaire and a letter by fax. Philips, which had relocated much of its manufacturing to southern China and encountered protests from workers, rejected my request on the ground that it would "infringe the company's confidentiality". Overall, it is very difficult to approach the corporations for they are multiple-structured and functionally separated. Some have a corporate communication department such as Motorola and National Semiconductor through which initial contacts could be made. For those which do not have such a department, I did not get a return call after

leaving several messages with the secretaries of the managing directors (such as Siemens, Germany).

For the semiconductor industry, I made phone calls to most of the semiconductor manufacturing companies to update their operations and development since only 20 companies have operated in H.K. throughout the past three decades. Since the production complex is small, the manufacturers tend to know each other and some are willing to reveal information about the other companies, which provides me a base to cross-check the data. In addition, I made personal interviews with five companies.

In total, I shall report 14 case studies and the development of the semiconductor industry. Sanyo (Japan), Motorola (U.S.) and Legend (H.K.-China) agreed to have their company names printed in this report. For the rest, I shall name each company according to the first character of the registered name of the company. When more than one company have the same first character, I shall name them according to their second character. The interviews were conducted in Cantonese (the Chinese dialect used by Hong Kong Chinese), Mandarin and English.

I had planned to interview specialists, researchers and government officials. I decided not to do the interviews because I found that the electronics industrial development in H.K. had been rather thoroughly discussed by the academicians, government officials and industrialists and recorded in printed media. The libraries of H.K. trade Development

Council and universities have a rich collection of information on the industry. Thanks to the improvement of the computer data base documentation, I could retrieve efficiently the published materials relevant to the research. I was advised that it would be difficult to get positive responses from the Shenzhen officials during this sensitive period. I attempted to make several contacts at the local offices dealing with foreign direct investments but I was told that the persons-in-charge had gone for conferences. I therefore concentrated on doing documentary research.

3.2.2. Documentary Research

Through desk and computer data base research, I collected secondary information from university libraries, research institutes, industrial and trade associations, and government departments. Statistics and data gathered include:

(I) the electronics industry of Hong Kong and Shenzhen

- establishments
- types of electronics products produced,
- electronics import/export/re-export performance,
- trade and production linkages
- employment structure

(II) macroeconomic data/policy of Hong Kong and Shenzhen (and Guangdong Province)

- trade pattern and production linkages between Hong Kong, Shenzhen and the developed countries
- economic and industrial development policies

(III) the electronics industrial development in Asia-Pacific
- the division of production among the major electronics producing countries in Asia-Pacific
- governmental policy on electronics industrial development

3.3. RESEARCH PROCESS

The research was conducted during July to September 1994 as a doctoral candidate of the Department of Sociology, Michigan State University and Visiting Scholar of the Center of Asian Studies, University of Hong Kong. The research process was divided into three phases as shown in Figure 2. Documentary research underlied all three phases. In Phase 1, I reviewed the existing research with questionnaires of similar themes and revised the questions. I conducted a pilot study by telephone interviews with persons-in-charge of two electronics companies in order to fine-tune the research questions.

In Phase 2, I interviewed the persons-in-charge of the identified companies. Following a preliminary analysis and comparison of data after initial interviews, I conducted follow-up interviews with selected companies to clarify research data and to obtain more in-depth information.

In Phase 3, I focused on documentary research on the new issues revealed in the interviews to cross-examine the data collected from various sources. An analysis of data across methodologies was hoped to provide a firmer grounding of the conclusion.

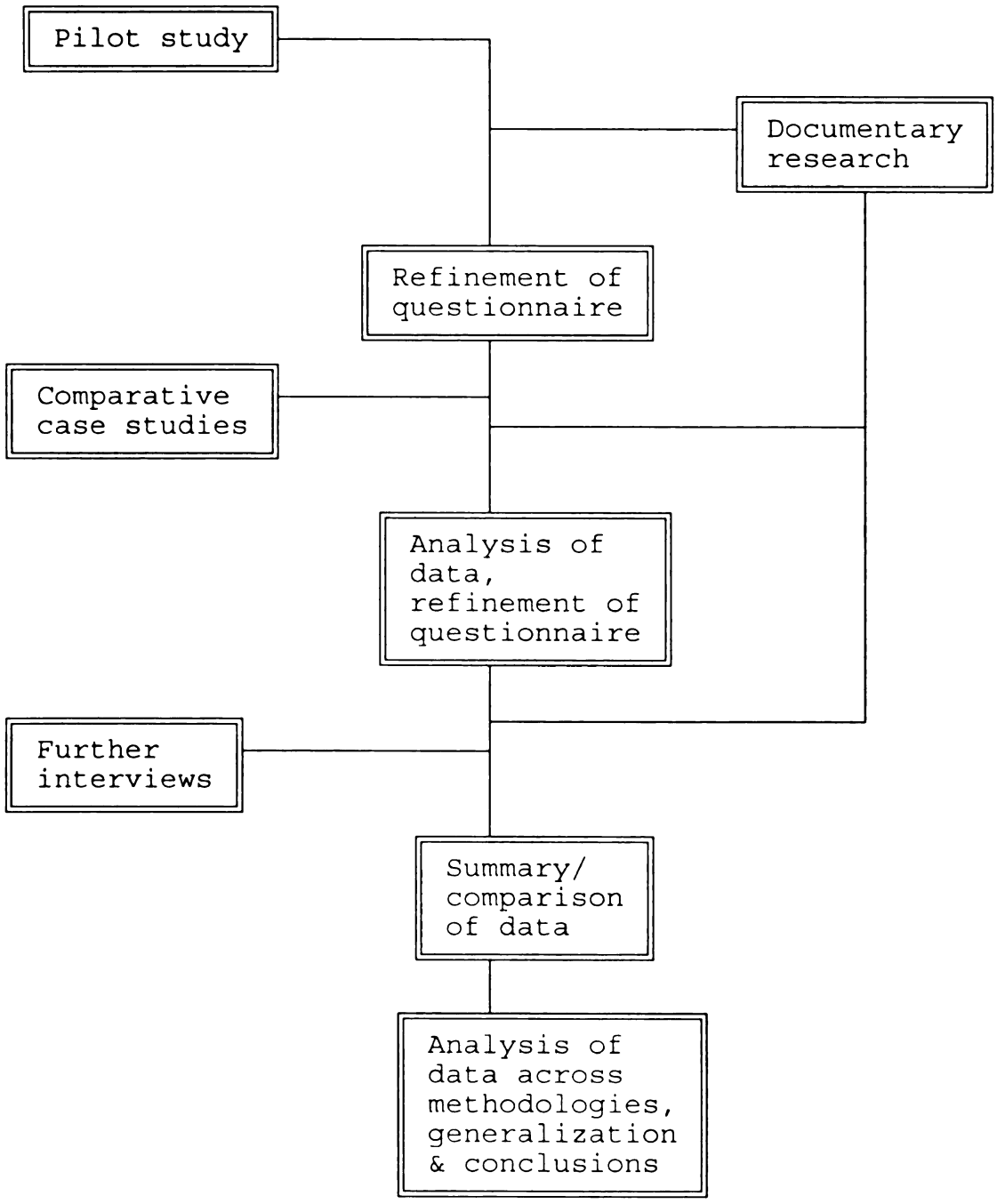


Figure 2: Research Process

4. THE CITY/REGIONAL CONTEXT

In this chapter, I shall provide a brief account of the political and economic contexts of the two cities based on documentary research.

4.1. HONG KONG

H.K. is located in the southernmost of China. H.K. was acquired by Britain from China in three stages. In the early 19th century, British commercial expansion into the Far East created conflicts between the British commercial capital and the Chinese government. The Chinese government imposed a ban on opium trade in Guangzhou and an expulsion of foreign merchants in the late 1830s. As a revenge, the British military forces attacked Chinese batteries in Canton and initiated the "Opium" War with China in 1841. China lost the war and was forced to cede H.K. Island to Britain by the Treaty of Nanking in 1842. After the Second Opium War (also known as the Second Anglo-Chinese War), and by the Convention of Peking of 1860, the Kowloon Peninsula was ceded to Britain. Britain took the opportunity offered by the "scramble for concessions" by the foreign powers in China, and pressurized the Chinese government to lease the New Territories (consisting of the mainland area adjoining Kowloon and 235 adjacent islands) from 1 July 1898 for 99 years by the second Convention of Peking (FEER Yearbook 1994: 123). The

territorial expansion of the colony to its present form was thus completed (see Figure 3). China will resume the sovereignty over H.K. in 1 July 1997.

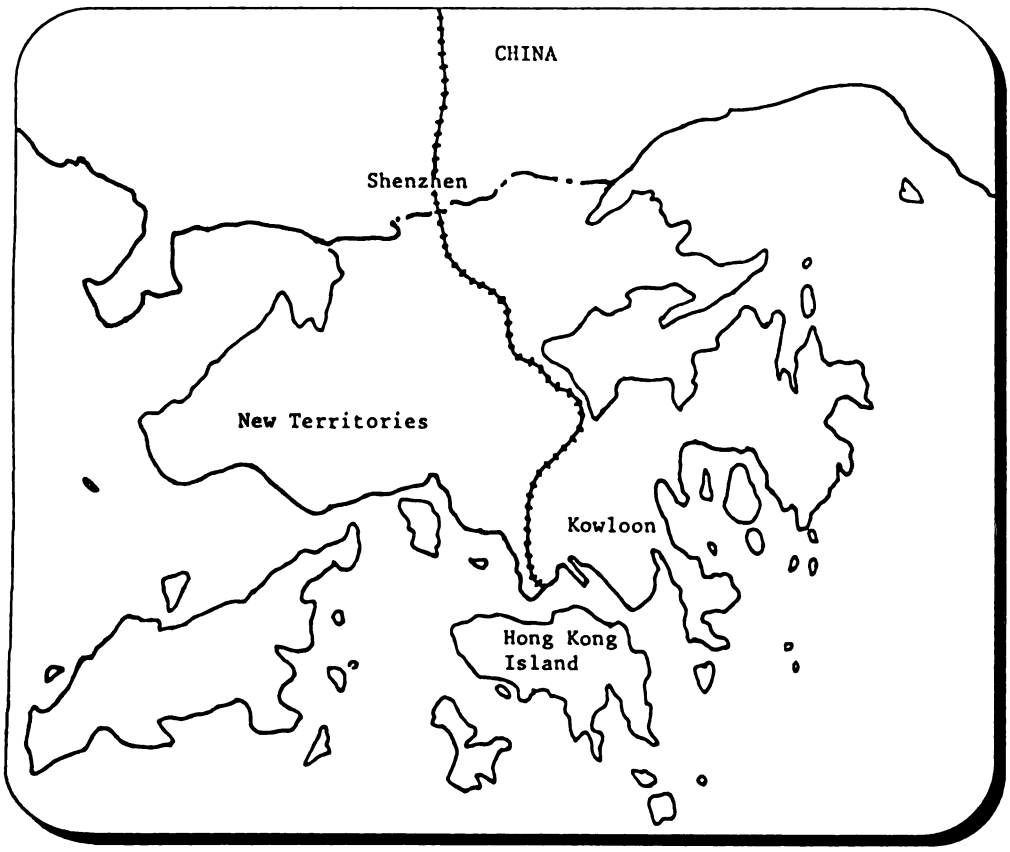


Figure 3: Map of Hong Kong

Source: Modified from C.F. Lai (1985), p.65

H.K. is densely populated with almost 6 million people (98% of whom are Chinese) crowded into 1,000 square kilometers of mountainous land on H.K. Island, Kowloon and the New Territories on the Chinese mainland. The territory is predominantly urban with only 7% of its land and 2% of its labor force engaged in agriculture. (Jones et al. 1992). H.K. has attained an average annual economic growth rate of about 8% for the past 25 years, boosting per capita income in 1993 to US$18,907, a level second in Asia just behind Japan (HK Yearbook 1994).

4.1.1. H.K. in the World System

From its inception as a British colony till the mid-20th century, H.K. has been incorporated into the global economy as an East Asian entrepot. H.K., which has the only developed deep water port on the southern coast of China[1], prospered throughout much of its history as the gateway to China. H.K. was a transhipment point mainly for British exports to China and for Chinese commodity and financial transactions with the Western countries. Despite the tremendous disruption of the entrepot trade by the Japanese occupation of the territory (1941-5), and the civil war on the Chinese mainland immediately after WWII, two-thirds of H.K.'s exports (primarily re-exports at this point) went to China, as late as 1951 (Henderson, 1989).

The manufacture of commodities was developed relatively early in H.K. Since 1930s, traditional carved wooden furniture was manufactured for both domestic consumption and

export (Coopers, 1981), and basic cotton clothing was produced for exports to other parts of the British Asian empire, especially Malaysia. These products were made in the traditional methods, using highly skilled artisan labor, and were never more than a small fraction of the territory's export. The post-war scarcity of consumer goods in China and Southeast Asian countries created a market for manufactured products.

H.K.'s embarkment on industrial manufactures was dated back to the early 1950s, as a consequence of primarily two factors: the geo-political considerations associated with the Chinese Revolution of 1949 and the Korean War of 1950-53, and internal (to the colony) social changes consequent to the Chinese Revolution. H.K. lost virtually its entrepot trade with China as a result of the U.S. imposition of an embargo on all goods of Chinese origin and the United Nations' prohibition of the export of essential materials and strategic goods to China to penalize China for its support of North Korea during the Korean War in the early 1950s. This U.S. move, together with the Chinese government's swift to the former Soviet Union as its principal trading partner, eliminated H.K.'s entrepot trade with China.

Nevertheless, the inflow of "refugee capital" (especially the Shanghai textile barons) and "refugee labor" who escaped the Communist rule in China since 1949[2], enabled H.K.'s transition from an economy based on entrepot trade to one based on industrial development--textile and garment.

Tremendous capital and managerial expertise in textile manufacturing were transferred to the colony from Shanghai. By the 1930s Shanghai had developed a "modern" cotton textile industry. By the late 1940s, many of the textile manufacturers had started to transfer their capital to H.K. with the declining power of Kuomintang (KMT) in China. While they did not possess the trading networks necessary for export purposes, they took advantage of the trading houses "hongs" in H.K., many of which had been involved in the entrepot trade and had established links with the British and other export markets (Szczepanik 1958).

The late 1950s saw a beginning of industrial diversification toward the manufacture of plastics commodities and electronics products. Given its shortage of land, industrial development was concentrated in light industries that could operate in high-rise buildings. When the entrepot trade revived once more in the 1950s, its supremacy in the H.K. economy was challenged by manufactured domestic exports. Throughout the 1950s, the industrial productivity grew by an average of 20% annually, and by 1959 the manufactured export had surpassed the value of the entrepot trade. By the early 1960s H.K. has become the largest supplier of manufactured goods in the developing world. In 1961, the value of the domestic export amounted to 75% of the total export, indicating that H.K.'s manufacturing industries exceeded the entrepot trade as the largest source of foreign earnings (H.K. Annual Reports 1961). In the 1960s and 1970s, an increasing

number of foreign capital together with local and overseas Chinese capital flew to H.K., a free trade port with no control over foreign exchange. This capital continued to generate diversification of various industries, trade, finance and tourism. H.K.'s industries were almost entirely dependent on the Western market. The rising tide of economic nationalism in Southeast Asian countries in the late 1950s largely shut H.K. products out of these countries. The prosperity in the Western countries and the relatively liberal international trade relations benefitted H.K.'s export-oriented production.

H.K.'s continuing development as an industrial society, at least in terms of export performance, is narrowly based on two sectors: (I) clothing and textiles, and (II) electronics. While the contribution of the clothing and textile sector declined from 52% to about 32% of the total export between 1961 and 1993, the contribution of electronics has increased dramatically over the same period from 2.5% to nearly 25.7% of the total export (Henderson, 1989; HK 1994).

The world economy since the 1970s has been unable to sustain the high growth rates of the 1950s and 1960s. The slowdown in world economic growth has led to a continued excess of capacities, intense global competition and poor profitability in many industries. The intense technological change has resulted in short product cycles. Consequently, technological development, product design and marketing, rather than manufacturing itself, have accounted for a growing

proportion of a product's value. H.K. lagged behind in technological development and faced an intensifying competition from Taiwan, South Korea and Singapore for all of them competed for the same overseas markets in a limited range of light manufactured products.

H.K. suffered from development bottlenecks - rising land and labor costs, a low technology level, and a dependence on component supply from Japan. To maintain their competitiveness, manufacturers relocated some of their production processes to Southeast Asian countries in the 1970s. With the open door policy of China since 1979, H.K. manufacturers moved their production north across the border.

Since the late 1980s, H.K. has slowly got into a low growth period; it has had an average annual growth rate of 5% to 6% in real terms after a high point of almost 14% in 1987. Yet the H.K. statistics can be misleading. As three out of four companies have operations in China, the profit generated in Guangdong, for instance, is credited to the Guangdong account. The profit is typically reported in H.K. in the way to realize immense tax savings (Overholt, 1993). The concept of GDP is not adequate to reflect the structural change of the economy.

The manufacturing economy has gradually given way to a service economy and H.K. has been developed into a global financial center. The colony has become an escape route for "hot" money in the Asia-Pacific region. It has been a key link in the banking-shipping-oil nexus. H.K. has emerged as a

financial center in the context of the rapid economic development of the region, the inconvenience of using London financial center, and the demand for an international financial center in an East Asian time zone. The comparative openness of the H.K. economy (free port, no exchange control, low tax rate and minimum state intervention) in contrast to its regional neighbors has made H.K. an ideal location for a financial center. Presently, some 513 authorized financial institutions from about 40 countries are conducting business in H.K. The presence of 81 out of the world's top 100 banks demonstrates the territory's position as a world financial center.

H.K. holds the world's third largest number of banks and originates the fourth largest offshore loans in the world. H.K. has the second largest stock market in Asia outside Japan. H.K. is a major center for funds management, with US$114 billion under management in 1989, as compared with US$15 billion in Singapore.

4.1.2. H.K.-China Economic Links

The economic development of H.K. has been closely linked to the open door policy of China since 1979. The importance of H.K.'s role as a middleman between China and the world is reflected in the tremendous growth of H.K.'s re-export in the 1980s. About 88% of the goods re-exported through H.K. were destined for, or originated from, China.

The banks of China have been heavily involved in the financial affairs of H.K. The Bank of China group is the

second largest banking group in H.K., after the H.K. Bank group. The Bank of China has become the third note-issuing bank in H.K. since January 1994.

H.K. is a major funding center for China. Most of China's fund-raising activities in H.K. have taken the form of syndicated loans. 80% of China's syndicated loans are raised in H.K. In some cases, H.K. is not the direct source of fund; it facilitates China to get access to external borrowing. These loans are mostly used to finance China's economic development and some are used by China-interest companies in H.K. to finance their investment activities in H.K. or other countries. In addition to syndicated loans, China-interest banks and other companies have been using heavily negotiable certificates of deposit, bonds, commercial paper and the issuing of shares to raise funds. Chinese-owned companies have begun raising capital on the H.K. stock market since 1987. A major development is the listing of shares of six of China's state-owned companies on the H.K. stock exchange. Investments in equity are beginning to cross the border in two directions, following the introduction of special shares for foreigners by China's two stock exchanges in Shanghai and Shenzhen in February 1992 (Jones et al., 1992).

H.K. has been an information center for the PRC investments. China has one of the lowest densities of telephones in the world: only 2 lines for every 100 people while H.K. has nearly one telephone line for every 2 people (The Economist, 8-27-94). Most of the foreign trade

corporations have offices in H.K., mainly to monitor international markets. The telecommunications network of H.K. is also an attraction, providing companies with quick and efficient links to the world and offering them with high international business profile (Oborne, 1986).

H.K. has been a convenient gateway to China for business and tourism. In 1993, 23 million trips to China were made by H.K. residents and 1.9 million trips were made by foreign visitors through H.K.

China has also been investing heavily in H.K. Its investment ranges from traditional activities such as banking, importing and exporting, wholesaling and retailing, transportation and warehousing, to newer areas such as property development, provision of financial services, manufacturing[3] and infrastructure-building. China has been H.K.'s third largest source of foreign direct investment, after Japan and the U.S.

4.1.3. H.K. Towards 1997

China will resume the sovereignty over H.K. in 1 July, 1997. The Sino-British Joint Declaration was concluded in 1984, the provisions of which have been legislated into Basic Law which will govern H.K. after July 1997. From July 1997 Hong Kong will become a Special Administrative Region (SAR) of the PRC. The establishment of the SAR represents China's recognition of "one country, two systems" to preserve H.K.'s position as a free economic and commercial center. The Basic Law contains a number of provisions to maintain H.K.'s

economic system. The right to private ownership, including foreign investment, will continue. H.K. will be allowed to supervise its financial markets independently so as to maintain its status as an international financial center. The public expenditure and taxation system in H.K. will remain independent of that in the mainland. Funds raised in H.K. will be used exclusively in the SAR and will not be handed over to Beijing. China will not have the right to levy taxes in H.K.

H.K. will also maintain its own currency and an independent monetary policy. The government of the SAR will have the right to designate banks to issue its currency. The H.K. dollar will remain freely convertible and no control will be applied to foreign exchange or capital movements. H.K. will continue to participate in GATT, which it joined in 1986, as a separate customs territory. Hong Kong will remain a free port and will pursue a policy of free trade and allow free movement of goods, intangible assets and capital.

Despite the assurances in the Joint Declaration and the Basic Law, the prospect of Chinese control has created considerable uncertainty in the history. The Chinese government has become more forceful in articulating its political views, and seeking to head off developments that would reduce the territory's freedom of maneuver after 1997. China has been blocking the democratization plans prior to 1997 proposed by the colonial government and supported by the majority of H.K. citizens. The Tienanmen Event of 1989 and

the H.K.-China dispute over the construction of a new airport have accumulated to reduce citizens' confidence in the territory's future.

The lack of confidence is reflected in emigration which increased from an average of 21,000 per year in the first half of the 1980s to 45,000 in the second half, and 50,000 in 1990. Many corporations, including H.K.'s de facto central bank, the Hong Kong and Shanghai Banking Corporation, have diversified their activities away from H.K. The dilemma was unresolved at the end of the 1980s, and the H.K. economy remained painfully vulnerable to capital flight and emigration (Haggard, 1990; Rimmer 1992). However, an influx of foreign companies and personnel and a sign of an increasing return of migrant professionals were also witnessed[4]. Hong Kong's economic and political development will continue to be influenced by the China factor.

4.2. SHENZHEN SEZ

Shenzhen is situated at the southern coast of Guangdong Province, bordering the New Territories of Hong Kong (see Figure 4). Shenzhen is divided into five districts, and the total area is 2020 square kilometers.

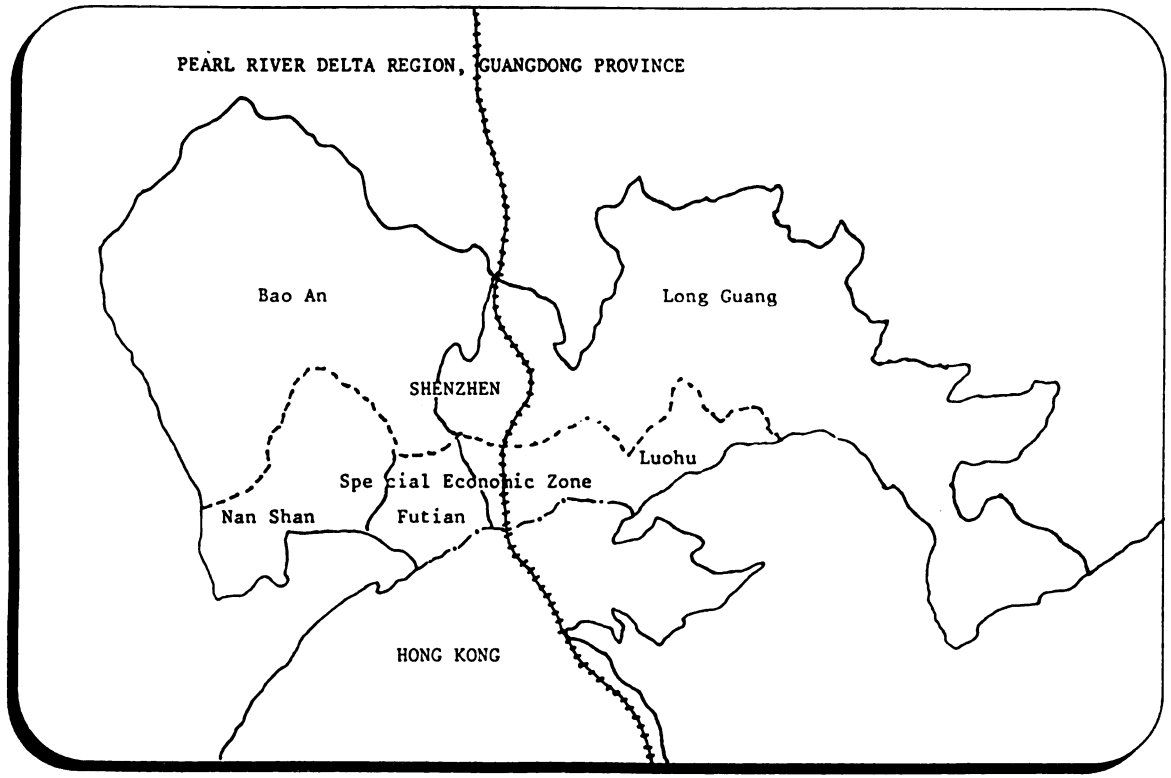


Figure 4: Map of Shenzhen

Source: Shenzhen Commercial/Industrial Directory (1993), Back Cover

When Shenzhen SEZ (with a size of 327.5 square kilometers, accounting for 17% of the physical size of the municipality) was established in 1980, the whole municipality had a population of only 333,000. In 1993, the number of residents has increased to 2.949 million, including 2.073 million temporary residents accounting for 70% of the population. The SEZ has 1.189 million residents, with a temporary population of about 668,000, accounting for 56% of the total population of the SEZ (see Table 2).

Table 2: Population of Shenzhen in Selected years

Year / Population ('000)	1980		1985		1993	
	Municipality	SEZ	Municipality	SEZ	Municipality	SEZ
Permanent	321	84	479	232	877	521
Temporary	12	10	403	238	2,073	668
Total	333	94	881	470	2,949	1,189
Temporary Population (%)	4	11	46	51	70	56

Sources: Shenzhen Yearbook 1981, 1986 & 1994

Most of the production and trade have concentrated in the SEZ. In 1993, the GDP of Shenzhen amounted to US$4.7 billion and the income per capita was about US$1,730 in 1992. The GDP of the SEZ alone amounted to US$3.6 billion and the income per capita was US$3,075 (about one-sixth of that of H.K.; see Table 3). Shenzhen has developed from a small border town

and rural farmland into a modern metropolitan with wall-to-wall skyscrapers indistinguishable from its archetypal capitalist neighbor, H.K.

Table 3: Basic Data of H.K., Shenzhen Municipality and SEZ

Data \ City	Hong Kong	Shenzhen M.	SEZ
Area (sq. km)	1,000	2,020	327.5
Total Population (Mn) temporary permanent	5.9 N/A N/A	2.9 2.0 0.9	1.2 0.7 0.5
contribution to GDP (%) primary sector secondary sector tertiary sector	 6 18 76	 3 56 41	 1 55 44
GDP (US$ billion)	109	4.7	3.6
GDP/Capita (US$)	18,907	1,730	3,075
GDP increase in real terms (%)	5.5	> 30	
inflation rate (%)	8.5	35	

Sources: H.K. Yearbook 1994
Shenzhen Yearbook 1994

4.2.1. Shenzhen SEZ in the Context of China's Economic Reform

The People's Republic of China was founded in 1949 following the Communist victory over the KMT which fled to Taiwan. After three decades of war and political instability, the economy and infrastructure were severely disrupted. The new government adopted a centrally planned economy, carried out land reform and later established agricultural communes.

China gradually faced the difficulties encountered by

other centrally planned economies; an irrational pricing system, an emphasis on quantity rather than quality, and a lack of incentives. Under the "iron rice bowl" approach, state companies provided lifetime employment, housing, and medical care, with no effective link between individual output and salary. Till 1978, growth was primarily a result of an increased input of labor and capital, with little growth in total factor productivity. The mistakes of the "Great Leap Forward" program in 1958 led to a widespread starvation of three years. The social chaos caused by the Cultural Revolution, which began in 1966, also had negative economic consequences.

Since 1978, China has begun a series of gradual economic reforms to increase the role of market forces, and that have resulted in dramatic economic and social changes. Reforms began with agriculture, which supplied 27% of China's GDP and employed more than two-thirds of its labor force. Reforms were extended to the industrial and service sectors in 1984. The establishment of private companies has been encouraged, and state-owned companies' share of industrial output has decreased from four-fifths in 1978 to about 50% in 1995 (Kaye, 1995). A corporate income tax system--with marginal tax rates de facto varying by companies--replaced the full remittance of profits of state-owned companies. Administrative decentralization has given provincial and local authorities more discretion in taxation and resource allocation. Reforms of the financial system are still in their infancy. The

foreign exchange market has been deregulated on 3 January 1994 with the government's announcement of letting the RMB's price depend on demand and supply. While international trade has been partially deregulated, trade barriers have continued to exist between provinces as provincial governments want to prevent disputes caused by differing provincial pricing arrangements and to protect provincial producers.

China also decided to use foreign capital by permitting the inflow of foreign direct investment and external borrowing from abroad, and by encouraging economic integration with its regional neighbors. Much of the economic integration is centered around the southern provinces of the Chinese mainland, which are geographically and ethnically close to H.K. (Guangdong) and Taiwan (Fujian). In the Sixth Five Year Plan document (1981-1985), Premier Zhao Ziyang announced the creation of SEZs in Shenzhen, Zhuhai, Xiamen and Shantou.

Most overseas Chinese have their ancestral roots in Guangdong Province and Fujian Province. Guangdong is adjacent to H.K. and over 80% of the H.K. population speak the Guangdong dialects. Chinese communities in Taiwan, Singapore and other Southeast Asian countries have their ancestral roots in Fujian and speak the Fujian dialects. The SEZs serve the political purpose of enticing H.K., Macau and Taiwan back to the Chinese rule. The Shenzhen SEZ and Zhuhai SEZ are adjacent to H.K. and Macau respectively, and Xiamen SEZ is just a few miles from the two coastal islands controlled by Taiwan. China will resume sovereignty over H.K., and Macau in 1997 and

1999 respectively under the arrangement of "one country, two systems". China wants to demonstrate to H.K., Macau and Taiwan its tolerance of capitalism in the SEZs. The SEZs played not only an economic but an essential political role in the regional orientation of the open door policy.

The SEZs were modelled after the EPZs (export processing zones) regarding the incentive package, and the provision of a separate and "special" physical infrastructure, economic management, and legal environment to attract foreign investments[5]. However, it was set out to be markedly different from Asia's EPZs in a number of ways, reflecting the differences in goals. Unlike an EPZ which was set out to generate local employment and foreign exchange, Shenzhen SEZ was aimed to attain multi-sectoral development in scientific research, industry, financing and tourism.

The SEZs were designated to play four "window" functions: (I) bringing in foreign capital and advanced technology, (II) absorbing scientific knowledge, (III) introducing modern management expertise, and (IV) articulating China's foreign economic policy (Jao & Leung et al., 1986). In order to attract advanced technologies, Shenzhen SEZ was designated to perform a matchmaker role between foreign investors and Chinese industrial companies. The SEZ offered cheap land, labor and infrastructure. The Chinese companies provided skilled labor and supplies of materials. Foreign companies were expected to offer capital, marketing and management techniques and technology.

A SEZ is characterized by a free-market economy and a dominance of foreign investment. The SEZ's regulations on foreign enterprises stress preferential treatment and safeguards for foreign investment. The provisions of the Regulations on the SEZs are summarized as follows (see Jao & Leung et al., 1986):

(I) Goods produced by foreign companies are primarily for export, and these companies can operate independent of state intervention.

(II) Parts of the products produced are allowed to be sold to Chinese domestic market under prior approval.

(III) Foreign investors are guaranteed a reasonable rate of return on their invested capital through preferential treatment. The privileges include low income tax[6] and exemption from duty on productive capital.

(IV) The enterprises are free to manage their labor.

4.2.2. Shenzhen's Economic Development

Of the four SEZs, Shenzhen was the first to be founded and has developed the fastest. In many ways this zone has served as a pace-setter for China's open door policy in economic development.

Before its designation as a SEZ, Shenzhen was a small border town, with some market-town functions but very little industrial development. It contained small-scale manufacturing companies, engaging mainly in the production of fertilizer, small farm tools and daily consumer items. In

1979, the gross industrial output value was about US$7 million and the total industrial employment was estimated to be around 5,000.

From its opening until 1983, Shenzhen SEZ was a cheap labor haven for Hong Kong manufacturers. Many of them, being hard-pressed by rising wages, moved north across the border the labor-intensive processes, obnoxious industries and manufacturing requiring a large amount of space. Shenzhen was once a dumping ground of Hong Kong's dyeing and textile-finishing industries.

In the early 1980s, Shenzhen SEZ also had a bias towards property and tourism owing to the significant influence of Hong Kong investors in the SEZ. Most of the SEZ investment came from Hong Kong and the investment decisions of Hong Kong businessmen were to a large extent based on what they perceived to be the safer bet, that was the utilization of the resources of Shenzhen to satisfy urgent Hong Kong market demands. A logical and important consequence of this influence was the spilling over of the property boom from Hong Kong to Shenzhen. A lack of reaction space during weekends and for short holidays in Hong Kong was another factor leading to a flow of investment into hotels and holiday resorts during the initial years of the SEZ. The early bias soon led to serious problems as the property market in Hong Kong plunged into a deep recession in 1982. The need to redirect the development strategy of the SEZ back to the promotion of manufacturing was reaffirmed.

Investments in industrial projects began to overtake property investments by the end of 1983 and became the dominant sector of foreign investment in the SEZ. The rapid industrial growth has been financed by foreign direct investment from H.K., Taiwan, Japan, U.S. and Singapore. Since the industrial development is dominated by the small-medium companies from H.K. and Taiwan, its industrial structure has been narrowly based on light industries. The H.K. investments concentrated in electronics, textiles, garments, toys and watches. The Taiwanese major manufacturing investments include shoes, umbrellas, toys, garments, electronics and computers (HKTDC, 1991). The industrial value output of light industries reached US$3.95 billion, representing roughly 67% of the total industrial output (Shenzhen Yearbook 1993).

H.K. has been the largest source of overseas investments. Until 1985, H.K. constituted 2737 contracts (96.88%) amounting to US$2612 million (90.32%) of foreign investment and thereafter about 70% of the total foreign investment. Japan was the second largest investor till 1990. Taiwan has heavily invested in Shenzhen since 1989 and has become the second largest source of overseas investment since 1991. Over the years, Shenzhen has diversified its sources of foreign investment. But H.K. still constitutes 70% of the total foreign investment. In the SEZ in 1992, H.K. and Macau companies owned 656 "san ci" ventures while the Western-Japanese companies had only 124 ventures (see Table 4).

Table 4: Foreign Manufacturing Investments in Shenzhen in 1992

Locality / Investment	Municipality	SEZ	Investments in SEZ (%)
W-J WFO	64	55	86
W-J JV	74	69	93
H.K./Macau WFO	54	45	83
H.K./Macau JV	656	605	92

Source: Shenzhen Yearbook 1993

The "san ci" constituted 48% of the manufacturing establishments of the SEZ, making up 76% of the Shenzhen's total industrial output in 1992 (Shenzhen Commercial/Industrial Directory 1993). The export of "san ci" reached US$3 billion, representing 59% of the total export value of the whole municipality. While the export value of Shenzhen Municipality reached US$5.09 billion, with an increase of 48% over 1991, the increase of "san ci" export was 61% over 1991 (Shenzhen Statistics Yearbook 1993: 25). This indicates the significant share of "san ci" in the industrial development and export.

In 1992, the registered "san ci" in production and trade has reached a number of 5757 companies in Shenzhen. Most of the city's economic activities concentrated in the SEZ. The SEZ attracted 87% of the city's industrial output and 95% of contracted foreign investment (Shenzhen Yearbook 1993; China Economic Review, 12/1993). Between 1979 to 1992, Shenzhen has attracted 6,108 projects of foreign investment at a value of

US$7.15 billion. The city has by far attracted more foreign investment than any other city in the country. Shenzhen has overtaken Shanghai as China's largest exporter in 1993, with an export value of US$7.8 billion. It was voted the fifth strongest economy among Chinese cities, after Shanghai, Beijing, Guangzhou and Tianjin (HKTDC, 1993).

4.2.3. Shenzhen's Attempt for Change

Despite its impressive growth in GDP, industrial value and export, Shenzhen has attracted mostly labor-intensive production and has been seen as a workshop of H.K. In addition, it is facing the development bottlenecks--rising costs of land, labor and infrastructure, and competition from the Pearl River Delta region and Shanghai Pudong development zone. Some argue that Shenzhen's best bet lies in its role as an information and service center for southern China (instead of an industrial and technological center) (Rosario, 1987).

In 1991, the Shenzhen Municipal government announced that Shenzhen would focus on the development of the tertiary sector and "new" and "high" tech industries (H.K. Economic Daily, 1/1994). Entering into the 1990s, Shenzhen has attempted to change its function of being a "workshop" for H.K. to providing higher value-added service and products (China-Hong Kong Economic Monthly, 6/1994). The Shenzhen Municipal Government Reform Committee and Guangdong Province Reform Committee have announced that Shenzhen will be developed to be "another Hong Kong". This is in line with Deng Xiao-ping's thought that China would need to create "several Hong Kongs"

(Special Economic Zone Economics, 4/1992: 12-13; 5/1992: 8-9).

The Shenzhen government has recently set an investment guide. Large shopping and retail industries, tourism, exhibition, warehouse and storage, and finance are on the list of encouraged projects[7]. Restricted projects include the production of TV sets, telephone sets, radios and recorders, hi-fi systems, color TV tubes and glass covers, laser record players, record and CD players, and circuit boards. Forbidden projects include printing and dyeing, electroplating, metallurgy alkalized printing, slaughtering, etc.

Since 1991 the government has adopted some measures to improve investment environment--expanding the securities market, and setting up a duty-free raw materials market and two bonded districts (similar to free trade zones where imports and exports need not pass customs) bordering H.K. In addition, foreign investors are now allowed to develop large tracts of land for both industrial and residential uses (China Economic Review, 12/1993).

Shenzhen provides land and labor to the H.K. manufacturers based in H.K. who in turn export capital, technology and jobs to Shenzhen. Both cities have adopted export-oriented strategy and competed with their neighboring economies in the global electronics market. The organization of the production system of the region mirrors the demand of the global market and the competition from the newly industrialized economies.

5. THE INDUSTRIAL CONTEXT

5.1. THE GLOBAL DIFFUSION OF ELECTRONICS PRODUCTION

5.1.1. The U.S. hegemony

Rapid global diffusion is one of the most salient feature of the electronics industry. After the second world war, the U.S. emerged as the leader of the global electronics industry. This was partly a result of its effort to convert its massive, war-related production capacity to peace time production of industrial and consumer products. The giant U.S. electronics companies possessed the technological, financial, managerial and marketing expertise to penetrate foreign countries with growing demands for consumer products resulted from wartime shortages. The advance in telecommunications and transportation technology facilitated the internationalization of the industry.

Among the war-torn countries, Western European countries made the fastest recovery and posed a demand for U.S.-made electronics products. The Western European countries offered tax incentives to attract foreign direct investments and posed high duties on imported products. They succeeded in attracting investments of the U.S. electronics companies. Consequently, Western Europe became the second major center of the electronics production.

Further industrial booms encouraged the U.S. manufacturing companies to seek investment opportunities outside Western Europe. Under the aid of special legislation by the U.S. government, the offshore plants were allowed to re-import the finished products under beneficial tariff conditions. This policy helped to foster the "global assembly". In the early 1950s, offshore manufacturing flourished in Japan, which had an abundant supply of low-wage labor. In the 1960s, the U.S. companies established assembly plants in Hong Kong, Taiwan, South Korea, Singapore, Mexico and Puerto Rico. In the late 1960s, Southeast Asian countries adopted the import-substitution industrialization policy. Global corporations started to build manufacturing plants in these countries in order to penetrate their markets.

During the period of the U.S. hegemony in the global electronics industry, global diffusion was primarily aimed to exploit cheap labor in Third World countries. The technical and spatial division of labor was highly polarized with knowledge- and capital-intensive processes in First World countries and labor-intensive processes in selected sites of Third World countries. More than in any other industrial sector, competition in the global electronics industry has been dominated by U.S. companies and Japanese companies. In high value-added electronics products such as computers and semiconductors, global competition "has come quite close to an exclusive US-Japanese affair" (Ernst, 1992).

5.1.2. The Challenge from Japan

In the 1970s, the U.S. hegemony began to be challenged by the ascent of Japan. The development of the Japanese electronics industry has been driven by commercial rather than military applications which significantly affect the economics of competition[1]. Japanese companies emphasized cost reduction, product differentiation, product quality and improvement, and the "high speed-to market" (Ernst and O'Conner, 1992: 64). They started to establish offshore plants as early as in the late 1950s to cut the production costs. These strategies enabled Japan's penetration in the world markets for electronics products. Japanese consumer electronics products (from radios in 1950s, TVs in the 1960s and 1970s, audio equipment in the 1970s, and VTRs and video camera recorders in the 1980s) flooded the U.S. market. The U.S. electronics companies were gradually expelled from producing consumer electronics for the world markets.

5.1.3. The Spread to ANICs

In the late 1950s, Hong Kong became the next Asian city to attract U.S. offshore investments and the first city to hold Japanese electronics investments. H.K. offered an abundant supply of low wage labor. Hong Kong, a duty-free port with a low corporate profit tax rate and transportation facilities, provided favorable conditions for foreign investment. Taiwan quickly followed Hong Kong to lure electronics investment from the U.S. Taiwan set up EPZs and offered tax incentives and an abundant supply of labor.

Taiwan's success was followed by South Korea in the mid-1960s and Singapore in the late 1960s.

5.1.4. The Technological Change and its Impacts on ANICs

The global competition in electronics production has continued to accelerate the technological change, industrial restructuring, and competition and cooperation among global electronics corporations. These have exerted tremendous impacts on the electronics industry of the ANICs whose development has been dependent on the investment by, and technology transfer from global corporations.

The 1970s witnessed the single most important technological change in the electronics industry--the advance in microelectronics[2]. The automation of assembly and quality control processes was made possible. As a result, the electronics production in First World countries has become much less labor-intensive than before. Higher quality products are now being produced with the use of computer-aided design, computer-aided manufacturing systems and industrial robots.

With the application of microelectronics technology, different stages of a production process can now be linked up under one central control. Forward and backward integration can enlarge the gains from an integrated information system. The microelectronics technology enables the evolution of Japanese "just-in-time" method of inventory management which has been adopted by some U.S. companies. Electronics manufacturers target specialized markets of high value-added

products in First World countries, and develop networks of component suppliers and assemblers close to the production plants. Hence, they store very little inventory of parts and components and obtain quick delivery from their suppliers nearby. By so doing, they can reduce their working capital.

Traditionally, two types of competitive strategies can be discerned in the electronics industry--cost reduction and judicious pricing. In a situation where rapid market growth is no longer assured, product differentiation capabilities have gained considerably in importance. This includes the definition of product standards and market segments, provision of customer services and the "speed-to-market" for new products and services. The center of competition has thereby shifted beyond the sphere of production to R&D, and to the coordination of increasingly complex network transactions with component suppliers, customers and external technological sources (Ernst, 1992).

The 1980s witnessed some signs of deinternationalization of electronics production. Microelectronic applications reduce the significance of labor costs, and increase the capital intensity and the advantage of proximity to niche markets concentrating in the First World. In the late 1970s and early 1980s, the growth of electronics foreign direct investments (especially in semiconductors) in Asia was rather slow. The U.S. companies such as Motorola, Intel, Fairchild, Applied Microcircuits, Apple, IBM, Prism Co. established onshore automated assembly plants (Sayer, 1985). Some

Japanese companies withdrew from South Korea and Taiwan, and established their own onshore assembly plants.

In general, the diffusion of electronics production to Asia has continued. The global corporations retain their operations in the ANICs to take advantage of the abundant supplies of low-cost skilled labor and the established regional sourcing networks. The automated operation is so expensive that it is only cost-effective to operate it on a 24-hour cycle and on a multi-shift and seven-day per week schedule. Countries with minimum labor regulation are ideal sites to practice automated assembly.

Automated operations are very costly and the investment can be risky especially in a rapidly changing market. Many companies still prefer offshore semi-automatic production to onshore automated assembly production. The practice of automation is uneven among different processes, products, and electronics producing countries. Automation has taken place more in semiconductor manufacturing than consumer electronics manufacturing. In the semiconductor production, automation is practiced more in wafer fabrication and testing processes than assembly processes. Automated production processes are also seen more in the ANICs than in Third World countries. The abundant supply of low wage labor in Third World countries keeps the balance between the alternatives of automation and the use of less expensive semi-automatic manufacturing processes in offshore subsidiaries of global corporations.

5.1.5. Global Subcontracting and the Asian Division of Labor

To cope with the intensifying global competition brought by the technological change, the global corporations devote resources to produce high value-added products, develop new technologies, and consolidate their global distribution networks. They increasingly subcontract to companies of the NICs to produce mature products on an OEM basis. Presently, global corporations are focusing on higher value-added products (integrated circuits, computers, and multiple-function VTRs) while ANICs are specializing in lower value-added products (TVs, audio equipment, computer peripherals, watches and calculators). This is termed as "product specialization" (or "horizontal division of labor). In recent years the ANICs have been moving from a vertical toward a horizontal division of labor with First World countries in electronics production. Originally confined to labor-intensive manufacturing for the global corporations, the companies of the ANICs are now increasingly undertaking an integrated local production or supplying products on an OEM basis (explained later in this chapter).

The electronics production is characterized by the fact that companies tied to Japanese companies are strong in consumer electronics, while those tied to U.S. companies are strong in industrial electronics. At the same time, the ANICs are developing process specialization with ASEAN-4 and China to reduce production costs.

5.1.6. H.K.'s Immediate Competitors

Both Taiwan and South Korea have become the leaders of the electronics industry in Asia after Japan. They have both successfully moved upscale to produce higher value-added products. Taiwan is gaining a larger percentage of the PC market, particularly in the mid-range (486-CPU) category. To position itself permanently as a major player in the global computer market, Taiwan computer manufacturers are increasingly marketing products under OBN. Having developed mid-range PCs, Taiwan is developing workstations and trying to get into the supercomputer market segment as well. To reduce its dependence on the foreign supply of strategic components such as ASICs (application specific integrated circuits), Taiwan is rapidly expanding its semiconductor industry. The industry has been thriving owing to a combination of government support for start-ups and booming worldwide demand for chips.

Of the four ANICs, South Korea's electronics industry is the largest. South Korea has become a major player in the global consumer electronics market, supplying color TV, VTRs, audio products and automobile entertainment products on an OBN and OEM basis. Owing to the high-volume usage of components in consumer electronics, South Korea has concentrated on the "commodity type" component manufacturing as opposed to customized components such as ASICs. The South Korean-made personal computer industry is not as competitive as that of Taiwan owing to a lower level of innovation.

Singapore's consumer electronics export has grown rapidly, overtaking Taiwan as the third largest producer among the ANICs (after South Korea and H.K.). As with Taiwan, Singapore's electronics product mix is moving upscale. Singapore is shifting toward technological sophistication and process automation in products such as computer peripherals, semiconductors, and telecommunication equipment. Japanese companies are increasingly attracted to set up production and design in Singapore[3]. The government has opted to form strategic alliances with global corporations to carry out R&D, and market research, and to train its personnel[4].

5.1.7. The Potential Competitors of H.K. and China

Malaysia is increasingly specializing in lower value-added products such as audio equipment which is also a major product line of H.K. electronics export. Malaysia is becoming the next large-scale producer of VTRs (after South Korea and Taiwan), as most of the leading Japanese companies transfer their production to the country to reduce costs and bypass the restrictions imposed by the Western European countries and the U.S.

The government has set up free trade zones in several sites and allows 100 percent equity ownership by foreign companies, even for projects catering for the local market. The labor costs remain low on the international basis, with an average rate of about 15% of the U.S. average rate and half that of Singapore. Malaysia has a supply of low-cost engineers. Penang has attracted 16 U.S. semiconductor

manufacturers. Malaysia has today become the third largest exporter of packaged semiconductors. National Semiconductor has set up the first wafer-fabrication facility in Penang. Motorola, Intel, Fujitsu and Hitachi have also announced plans to establish wafer fabrication processes in Malaysia. Malaysia has begun to attract some investments in computer peripherals assembly (mostly by U.S. companies based in Singapore). The electronics industrial development of Thailand is similar to that of Malaysia. The labor cost of Thailand is lower than that of Malaysia. The government has offered substantial tax holidays to foreign investors and allowed them to sell 20% of their production in the local market. Thailand is strategically located to provide an access to the 100-million-strong Indo-Chinese markets of Cambodia, Laos, Vietnam, and Burma.

Thailand has attracted assembly processes of computer and peripherals as well as consumer electronics. Thailand has become a major producer of computer peripherals in Asia. Thailand's rapid development owes much to the transfer of production capacity by leading U.S. disk drive companies from their bases in Singapore. At the same time, Japanese manufacturers of keyboard, floppy disk drives, micromotors, and other peripherals also established large-scale production processes in Thailand. In absolute terms, Thailand's exports remain small, but in terms of growth they have outperformed even South Korea and Taiwan over the past few years. The Philippine economy has been in a better shape in recent two to

three years. A Japanese and U.S. multinational aid program was extended to the Philippines to cope with its external debt and to embark on the export-oriented industrialization. The Philippines has a low wage rate (even lower than that of Thailand, and one-fourth of that of Taiwan and South Korea). The Philippines has attracted investments from South Korea, Japan, Taiwan and the U.S. Uniden, a Japanese company of communication equipment, closed an electronics factory in Taiwan and replaced it with one in the Philippines.

5.2. THE ELECTRONICS INDUSTRY OF HONG KONG AND SHENZHEN

5.2.1. A brief History of H.K.'s Electronics Industry

5.2.1.1. Since 1959: Radio and radio parts production

H.K.'s electronics production began with radio assembly for a Japanese corporation, Sony. The intensifying competition with the U.S. electronics producers in the late 1950s and the growing wage rates in Japan, drove Sony to partially internationalize its radio assembly. By 1959, H.K.'s plastic industry had already been established for 12 years and was capable of making casings and knobs for small radios. The manufacturing of plastic toys powered by batteries in the 1950s brought into existence companies which could manufacture simple electrical products such as wires, transformers, batteries, switches and dry cells. All the supporting industries were in place. The only input H.K. needed to produce wireless radios was the transistor which could be imported from Japan.

H.K.'s first electronics companies, the Champagne Engineering Co., assembled over 4,000 radio a month for Sony under a subcontract arrangement (Henderson, 1989). By 1960, Champagne and two other companies had started to manufacture their own radios at a cost even lower than that of the Japanese (due to lower labor and overhead costs). Consequently, the H.K. radio export to the U.S. effectively undercut the Japanese at the lower end of the market during 1960-61. By 1961, 12 companies manufactured radios in H.K., of which two were joint-ventures with U.S. companies (Ng, 1992). The successful competition with Japanese producers led to a Japanese government ban on the export of transistors to H.K in 1962. They were, however, substituted by imports from the U.S. and Britain. Meanwhile, the H.K. radio output increased by one-third that year. The Japanese government realized that its ban was ineffective, and lifted it in the same year. Furthermore, the H.K. companies moved quickly to manufacture condensers, capacitors and radio-transistors for radio production in 1962. The radio manufacturing industry flourished. The number of companies increased in the following years (HKGID, 1993b).

5.2.1.2. <u>The 1960s: Production Differentiation</u>

The industry was also diversified to the production of FM radios (1964), television tuners (1965), and calculators (1968). Companies moved beyond assembly to produce television sets, recorders and calculators as well as parts and subassemblies for these products. Exports of parts and

components grew quickly in the later part of the 1960s (Ng, 1992). Nevertheless, the critical components were imported.

In the 1960s, a number of semiconductor manufacturers started to establish assemblies in H.K. Fairchild Semiconductor, the "mother" of Silicon Valley, moved its assembly to H.K. in the face of substantial price competition in transistor markets. Motorola, National Semiconductor and Sprague followed. By the late 1960s, H.K. has become the principal Asian assembler of semiconductors for the U.S. market. Japanese companies such as Hitachi, Oki and a number of others also moved their assemblies to H.K. Several local companies emerged to assemble chips for the global corporations (Henderson, 1989).

5.2.1.3. The 1970s: "Fad" Products

The greatest increase in the electronic industrial output in the late 1970s were "fad products". They were consumer products with short product life cycles. They were fashionable items that were sensitive to changing consumer tastes. One example was the electronic calculator -- the kind included in medium-priced wallets or offered as promotion gifts in direct-mail marketing. Others included electronic toys, watches and clocks, and telephones with various features (HKGID, 1993b).

5.2.1.4. The Eighties: Microcomputers

The manufacturing of computers emerged in the early 1980s. The manufacturing was not technology-intensive. H.K. assembled mostly 8-bit micro-computers at the very low end of

the market. With ROM (read only memory) and RAM (random access memory) of up to 64K, they were mostly home computers to run small simple programs and to play electronics games (HKTDC, 1984). H.K. companies learned to make micro-computers by making television games, electronic games and calculators in the late 1970s. Seeing the increasing global demand for microcomputers, some of the large local companies entered into the production of this new product. At the height of its growth, there were 30 companies manufacturing computers and computer parts. The first Hong Kong-made computers were exported in 1981, and the sector was expanded quickly in the next two years. The low-priced home computers were like consumer products in their short product life and simple technology requirements (HKGID, 1993b).

Most of the companies experienced financial difficulties in the mid-1980s.China spent heavily on the imports of computers in the early 1980s but later canceled many of its orders with its inability to pay with foreign currencies. This exerted an adverse effect on H.K.'s computer manufacturing. Even large companies (large by H.K. standard, e.g. listed companies in H.K. Stock Exchange) failed. They were not as fast as their Taiwanese counterparts to bring out new products and their delay hampered them to get a significant market share. Many withdrew after a while's attempt and the sector remained stagnant.

5.2.2. The Structure of the Electronics Industry

The electronics industry has been H.K.'s second largest export earner after the clothing industry, accounting for an export value of 57,333 million and 25.7% of the total domestic export in 1993. It consisted of more than 1,446 companies in 1992. It has been the second largest employer in the manufacturing sector. It employed 53,591 workers in 1993, representing 11% of the manufacturing employment. It has also been the largest recipient of foreign direct investment since 1991. In 1992, the U.S. was the largest overseas investor in the industry, constituting 47% of the total investment; Japanese and the Netherlands were the second and third largest investors respectively. The three leading investors together accounted for 91% of total foreign investment in the industry (HKGID, 1993a). Although the two largest investors, U.S. and Japan, comprised only 6% of electronics establishments, they employed 35% of the industry's workforce. Their restructuring affects the H.K. economy and numerous employees in the industry.

Most of the H.K. manufacturers work as OEM suppliers for global corporations. That is, they produce according to the specifications given by the contractors, and do not need to carry out marketing in foreign markets and R&D. Foreign contractors send personnel from the headquarters or employ inspecting agents to inspect the OEM manufacturers' production technology, factory lay-out, and sales records, etc. before deciding to place an order. After production, the inspecting

agents examine the products to be shopped to the contractors (see Figure 5). Recent high commission rate for the agents have cut the profit margin of low-priced product manufacturers.

A Japanese manufacturer does not place an OEM order with H.K. manufacturer unless there is a 30% to 40% saving in production costs as compared with domestic manufacturing. This amount of cost saving is required to cover offshore procurement risks and to allow for additional transportation, insurance, quality inspection and warehousing expenses (HKTDC, 1991a).

All respondents reveal that the Japanese customers are more demanding than the Western customers. The OEM manufacturers need to achieve a high degree of vertical integration and to have highly automated facilities of the required standard. They then place trial orders and will increase the order size only if the quality is stable (within the permitted ratio of defeats to shipment size). It is reported that the U.S. buyers generally allow a defect rate of 10% of the shipments, Japanese companies demand zero defects. Such a high standard of quality requirement naturally entails high production costs.

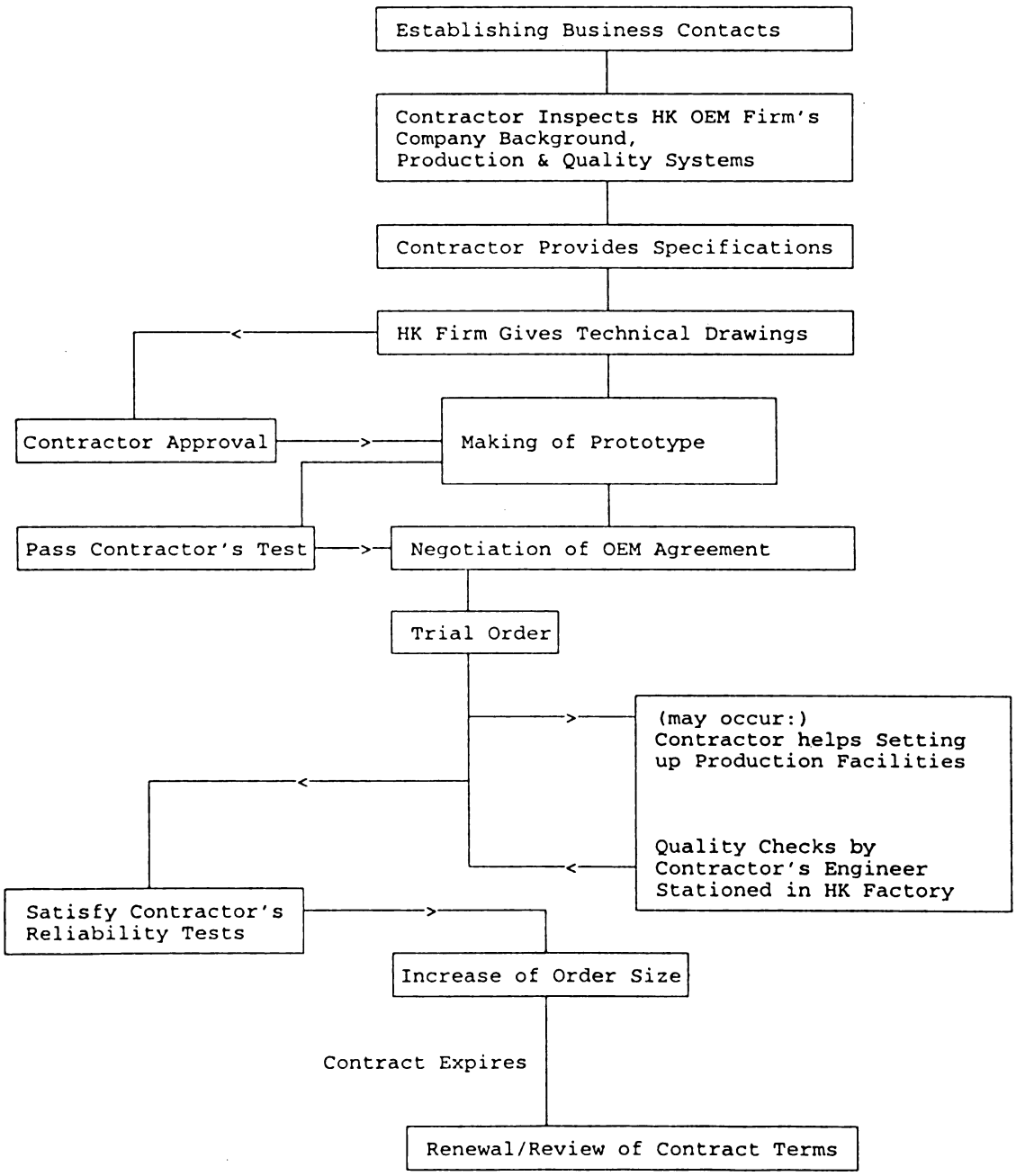


Figure 5: Typical Procedures in Reaching An OEM Agreement

Source: Modified from HKTDC (1991), OEM Business with Japan's Electronics Industry.

Manufacturers do benefit from contractors a certain degree of technology transfer. The contractor (especially the Japanese) sends personnel to the OEM manufacturer's factory to advise the establishment of production lines and conduct sample check. H.K. companies can learn advanced manufacturing technologies, new design, production management, and methods of setting up quality assurance system.

The electronics industry has been facing structural problems--rising wage and land costs, a low level of technology, weak supporting parts and components segments, severe competition with local and overseas counterparts, and an over-reliance on the U.S. market and on Japanese supply of critical components.

Nearly 80% of Hong Kong electronics manufacturers maintain their competitiveness by moving assembly processes north across the Hong Kong border to Shenzhen and the Pearl River Delta region (see Figure 6) where abundant supplies of comparatively cheap labor and land are available (HKTDC, 1990). They can then make use of the preferential entry into the U.S. under the Generalized System of Preferences (whereas Hong Kong has lost GSP after January 1988). The total number of foreign companies reached a peak of 129 in 1988 but declined to 82 in 1992. Some global corporations such as Sanyo, Philips, Commodore, AST, etc. moved a part of their production from H.K. to Shenzhen and the Pearl River Delta region.

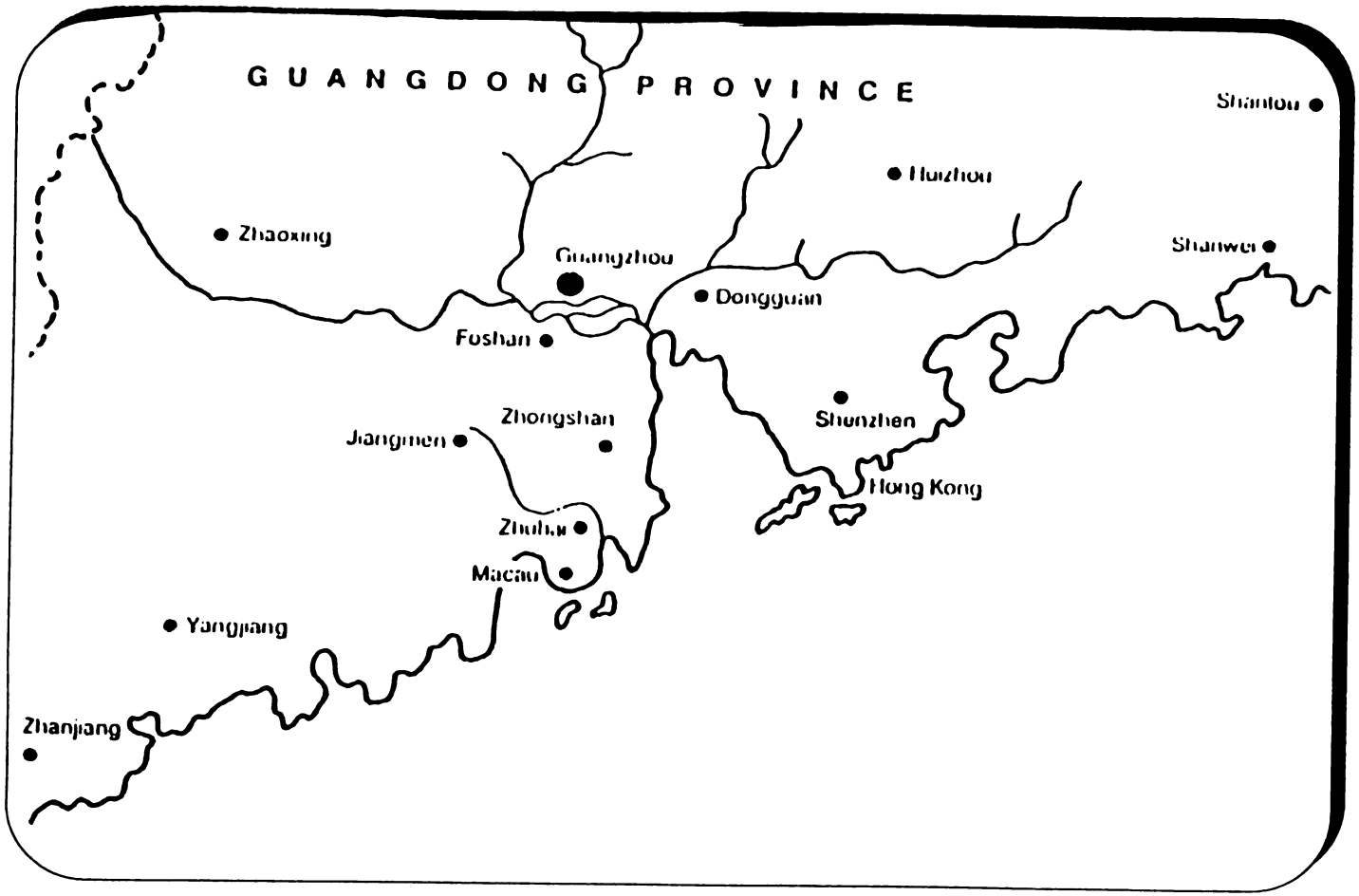


Figure 6: Location of the Pearl River Delta Region

Source: Hong Kong Investment in Pearl River Delta (1992). Hong Kong Federation of Industries.

5.2.3. **Shenzhen's Electronics Industry**

There was only one electronics assembly factory in 1978 employing 100 workers, and it could produce only simple radios, amplifier and transformer. By the end of 1983, the electronics industry became Shenzhen SEZ's largest industry as the manufacturers based in H.K. moved their production north across the border. In 1985, the electronics industry constituted 48.7% of the total industrial output (Chen, 1987). The assembly and processing branches of the electronics industry grew at the expense of other industries and against the government's wish of industrial diversification.

Despite industrial diversification in the 1990s, the electronics industry of the municipality remained the largest, accounting for about 31.7% (and 34.8% in the SEZ) of the gross industrial output of the whole municipality and 13% of the country's total electronics industry output value respectively in 1992[5] (Shenzhen Commercial/Industrial Directory, 1993; Shenzhen Yearbook 1993). The industry has been the largest employer in the manufacturing sector, employing 123,171 (and 83,124 in the SEZ alone), representing 22% of the total employment in the whole municipality. The production in Shenzhen SEZ and Municipality is much more labor-intensive than that of H.K.; the average number of workers per establishment in H.K. was 42 but 227 in the SEZ and 345 in the Municipality in 1992 (see Table 5).

Table 5: Basic Data of Electronics Industry in H.K. & Shenzhen

Location / Category	H.K. (1993)	Shenzhen Municipality	Shenzhen SEZ (1992)
# of companies	1446	357	300
# of workers	53,591	123,171	83,124
Average # of workers/company	42	345	227
Contribution to manufacturing employment (%)	8.9	22	N.A.
Contribution to total industrial value (%)	N.A.	31.7	34.8
Export Value (million US$)	7,350	995	840
Export as total domestic export (%)	25.7	N/A	N/A

Sources: Shenzhen Statistics Yearbook 1993
Hong Kong Annual Yearbook 1994

The local sector is dominated by a few large state companies which has a much better record of domestic sales than exports. It is reported that companies can sell in the protected domestic market at a price double or triple the price for the world market. Shenzhen is currently the leader in the production of color TVs, tape-recorders, and audio equipment in the whole country in terms of quantity (Shenzhen Industry/Commercial Directory 1993).

The government has pressurized foreign investors to upgrade their investment from processing and assembling

arrangement to "san ci" when they apply for a renewal of investment contracts. Many move north to Bao'an District or even further outside Shenzhen to other PRD cities (see Figure 7). Those who stay need to comply to the new demand.

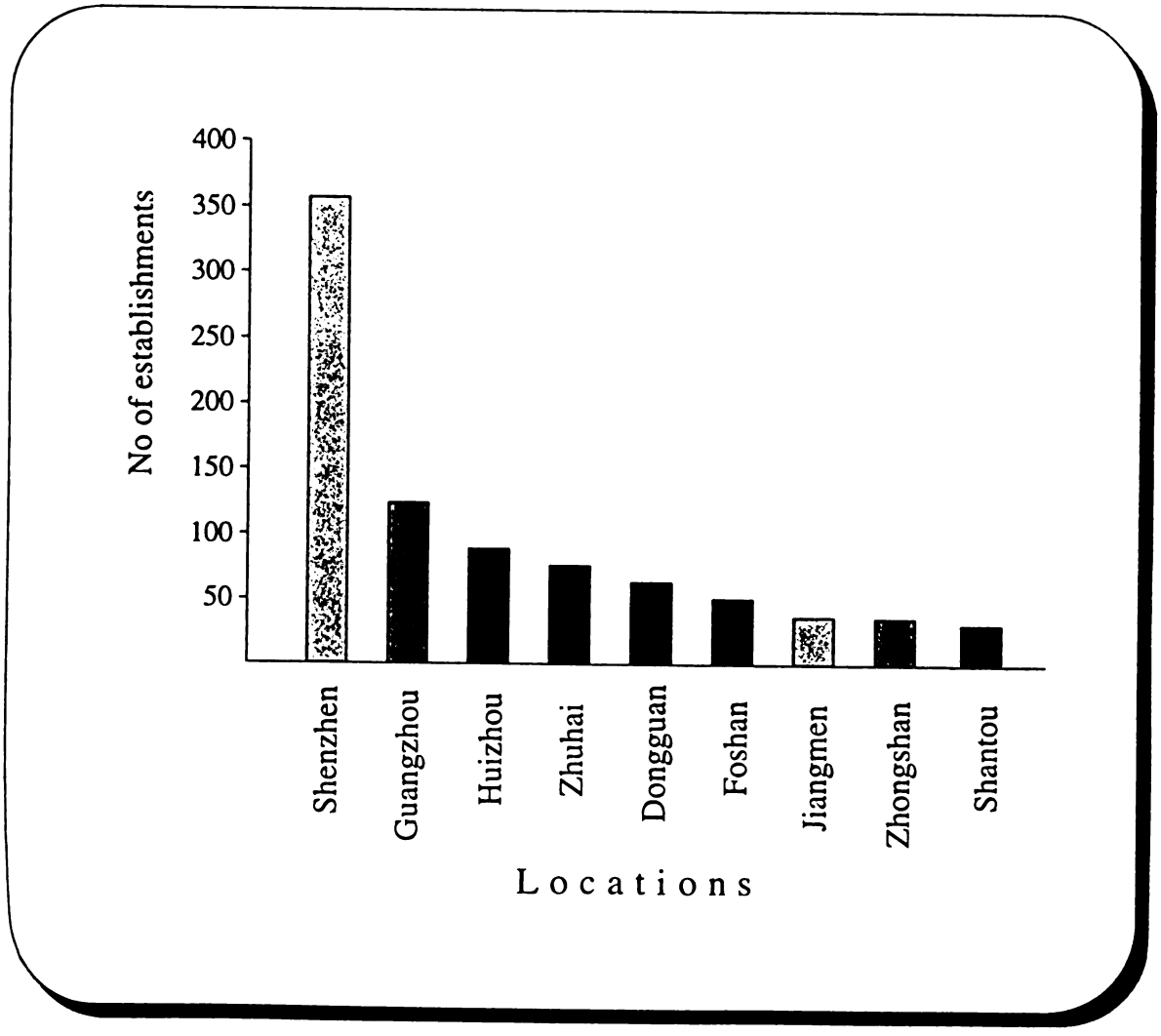


Figure 7: Electronics Establishments in the PRD Region

Source: Shenzhen Yearbook 1993

The electronics manufacturers operating in H.K. have been facing rising wages and land costs, and competition from other newly industrialized economies. Official reports indicate that industrial relocation to Shenzhen and even further north has taken place at a substantial rate, and H.K. has been transiting to higher value-added production. Certainly, the restructuring of companies is not uniform. Who stays and who relocates? What factor affects the decisions? How do companies restructure their investments? The strategies of individual manufacturers will be reviewed in the next chapter.

6. A REPORT OF THE CASE STUDIES

In this chapter, I shall divide the report of the case studies into two sections: (I) the restructuring of the semiconductor industry, and (II) the restructuring of the labor-intensive production. In the capital-intensive production, I choose to update the restructuring of the semiconductor industry and to report three case studies to reveal diversified strategies. In the labor-intensive production, I shall report five case studies including three global corporations and two H.K. companies. For the rest of the H.K. companies, I shall list out the distinctive features of their investment strategies in tables in Appendix D.

6.1. THE RESTRUCTURING OF THE SEMICONDUCTOR INDUSTRY

Henderson's research (1989) has so far been the most systematic study on the semiconductor industry of H.K., and his research provides a base for my research. According to Henderson, H.K. has become a technological and managerial core of the Asian division of production in semiconductors. Henderson documented that 21 companies engaged in semiconductor manufacturing in H.K. in 1986 as listed in Table 6. The subsidiaries of global corporations have shifted from doing labor-intensive assembly to testing and design in H.K. The U.S. companies have engaged in capital deepening and specializing in more technologically advanced processes.

Table 6: Semiconductor Producers in H.K. in 1986 & 1994

Data / Company	1986			1994		
	Country	functions	# of workers	functions	restructuring	# of workers
Motorola	USA	d,t,r	750	d,t,r, a		3000
National Semiconductor	USA	a,t	1000	s	a & t in Philippines	350
Fairchild	USA	t	100	no		0
Siliconix	USA	d,a,t	550	r		10
Teledyne	USA	a,t	200	t	a in Thailand	300
Sprague	USA	t,r	200	no		0
Commodore	USA	a,t	200	s	a in S. Korea & Philippines	200
Micro Semiconductor	USA	a,t	100	s	a in Scotland	100
Zilog	USA	d,r	100	r,s		7
Sanyo	Japan	a,t	N/A	s	a,t in Thailand, Shenzhen, Japan	200
Hitachi	Japan	d,a,t	200	r,s		150
OKI	Japan	d	20	r,s		29
Philips	Holland	a,t	500	a		N/A
Ferranti	UK	d,a,t	500	no		N/A
Swire Technologies	UK/H.K.	a,t	500	a,t		1,350
Elcap	H.K.	w,a,t	300	w,a,t	bought by Vitelic	250
RCL	H.K.	w,a,t	130	d,w	a in Shenzhen	300
Microelectronics	H.K.	w,a,t	400	a,t	a in Shenzhen	120
Semiconductor Devices	H.K.	a,t	900	s	a & t in Suzhou	N/A
Pacific	H.K.	mask	10	m		10
Hua Ko	PRC	d,w,a t	300	d,w,a, t		250
Century Electronics	H.K.	a	N/A	no	closed	

a: assembly, t: testing, w: wafer fabrication, d: design, r: research, m: mask making, s: sales

Sources: Data of 1986 is provided by Henderson (1989); Data of 1994 is based on interviews and case-studies

The number of production establishments has been decreasing (see Table 6). Most of the global corporations have either moved their production back to their homelands or to China and Southeast Asian countries. Motorola HK, Swire Technologies and Philips are exceptions. Among the U.S. companies, Fairchild, and Sprague have closed their operations. Teledyne has moved its assembly to Thailand. Commodore has moved its production to South Korea and the Philippines, and set up a computer sales operation in H.K. Microsemiconductor has shifted the assembly to Scotland and carried out sales in H.K. National Semiconductor produces only in the Philippines and has turned the H.K. operation into an Asia marketing and sales office, distributing and providing technical support to customers (Computerworld, 4-18-91). Siliconix has turned its H.K. operation into a regional office. Zilog maintains only a regional office and sales function in H.K., and its production is carried out in the Philippines and other Southeast Asian countries.

Among the Japanese companies, Hitachi closed its semiconductor production in 1978[1] and has been maintaining the functions of consultation, international procurement, marketing and after sales service. Sanyo has moved its assembly and testing processes to Shekou (Shenzhen, China), Thailand and back to Japan. Oki has shifted its design and production to Taiwan, Japan and Singapore, and is keeping a regional office in H.K. Among the European companies, Philips (the Netherlands) maintains its assembly of LCD and sales in

H.K. Ferranti (Britain) has stopped its joint venture with Semiconductor Devices and moved back to Britain.

Semiconductor Devices was one of the oldest (25 years) and largest of H.K.'s contract assemblers when it was a member of the London-based Wheelock Marden group of companies. The British-H.K. company sold Semiconductor Devices to a H.K.-based group, Wheelock H.K. because it did not have confidence in the future of H.K. after 1997. The H.K.-based group had a very strong relationship with China. It closed its 30,000 square foot manufacturing facility with a workforce of 700 in H.K. and shifted all its production to Suzhou (China)[2]. It set up an office in a commercial district (in Wanchai) and carried out only marketing and procurement in H.K.

The government subsidy in industrial land use for high-tech industries came late to prevent the withdrawal of some manufacturing companies but not too late to rescue some. Motorola's presence in the Tai Po Industrial Estate has attracted a clustering of local companies (Pacific, RCL, ASAT, Hua Ko, Vitalic). However, these companies have not yet been successful in obtaining contracts from Motorola since their production technology has not met the demand of Motorola's requirements. All of these companies keep major manufacturing processes and design work in Tai Po. ASAT and Vitelic relocated part of the labor-intensive IC assembly work to their factories in Shenzhen.

The following reports the study of three semiconductor companies: (I) Motorola Semiconductors H.K. Ltd.;

(II) a subcontract assembly house owned by British capital based in H.K.; and (III) a H.K. chip producer.

6.1.1. Motorola Semiconductors H.K. Ltd.

6.1.1.1. Production Organization

Motorola Semiconductors H.K. Ltd. (Motorola HK), established in 1967, is a wholly foreign owned subsidiary of Motorola Inc., a US$17 billion (1993) company[3], and the headquarters of the corporation's Asia-Pacific Semiconductor Products Group. The Asian-Pacific headquarters coordinates its subsidiaries in China (in Tianjin), Taiwan, Korea, Japan, Southeast Asian countries, and Australia (see Figure 8).

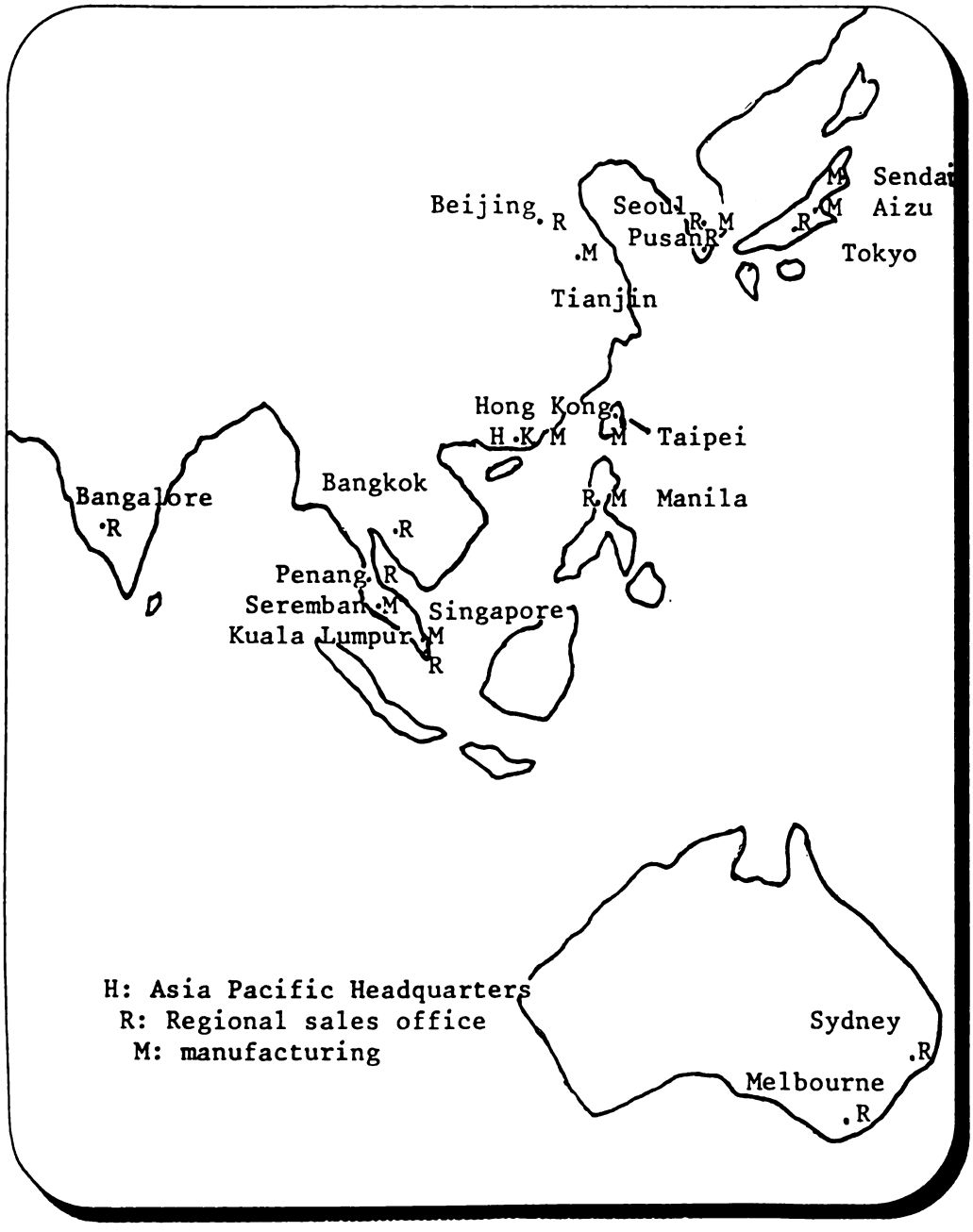


Figure 8: Motorola's Asia-Pacific Facilities

The company was established to do final testing of US-manufactured circuits. Manufacturing consists of die bonding and wire bonding of linear ICs and microprocessor testing. Today, the company designs and manufactures advanced semiconductors such as high-density dynamic RAM memories, complex ASIC and BiMOS and bipolar ICs for many types of applications by CAD/CAM/CIM (computer-aided design, computer-aided manufacturing, computer-integrated manufacturing).

Many semiconductor companies have moved out of H.K. because of the high land prices in the city. Motorola HK suffered from rent increases and moved its manufacturing facilities several times. The management realized that it would be impossible to operate in Hong Kong without owning land to build manufacturing facilities in the long run. The company bought an industrial building in Kai Fong industrial district 11 years ago when the land price decreased during the Sino-British negotiation over Hong Kong's future. Again it bought the land in the high tech zone of the Tai Po Industrial Estate in 1990 (at a subsidized rate offered by the H.K. government) when there was not so much competition for the Industrial Estate after the Tienanmen Event 1989. With this purchase, Motorola HK will not be threatened by the land prices in H.K. and can consolidate its development in the territory.

6.1.1.2. Technological development

The company inaugurated the Silicon Harbor Center, a 326,000 square foot 3-storied facility, in December 1990 in

the newly acquired 7.2 acre land in the Tai Po Industrial Estate. This is an ultra-modern plant housing Motorola's Asia Pacific headquarters, a regional computer center, an integrated circuit design center, and a manufacturing center which is fully automated and linked via fibre optic local area network and high speed satellite with the company's global operations. According to the manager, these technologies represent not only the "state-of-the-art" in the H.K. electronics industry, but also one generation ahead of similar facilities in the U.S. and European countries.

Technological improvement is a guiding principle to enhance the company's competitiveness since it is seen as the key to quality improvement and speed to market. In the year of the Dragon, 1988, the Motorola HK design team delivered an application specific integrated circuit (ASIC), dubbed DragonKat. DragonKat makes it possible to create miniaturized end products such as multi-language translators, advanced pagers, and portable telecommunications equipment. The chip's read only memory (ROM) can be programmed by Motorola customers giving the users the flexibility to create customized applications. Design data for the DragonKat can be transmitted on a high speed satellite link to Motorola Worldwide's mask and wafer fabrication facilities in the U.S. The chips themselves are processed in what Motorola considers to be a "state-of-the art" silicon wafer facility in Scotland (Motorola publications; Yager, 1991).

The company is creating an alliance between the industry, government and academia like that in Silicon Valley, California. It is working closely with the universities and polytechnics in H.K. Many of the key members of Motorola HK came from these tertiary education institutes. The company focuses on training by providing resources such as: (I) Motorola University in Chicago, (II) Asia-Pacific training design center in Singapore, (III) in-house on-job training, (IV) in-house instructor training, and (V) local consultancy training.

6.1.1.3. Employment

Labor cost reduction is not a main concern for the company. According to the respondent, a reduction of labor cost may be crucial for low-end manufacturing but not for capital-intensive production which cannot be moved flexibly to wherever labor and land costs are low. The relocation of a capital-intensive manufacturing involves higher costs than that of the labor-intensive manufacturing; the former has higher capital-to-labor ratio and demands more space to install equipment and machines than the latter.

The company has no plan to build manufacturing plants in southern China. According to the respondent, although the labor cost in China is presently low, it will increase in a few years. The company will not move the design process to China whose technological level remains low. Chinese engineers have a good command of theoretical knowledge but lack practical and application-specific knowledge. The

company understands that China in the long run will not tolerate the situation that global corporations exploit the China market without using its local resources. The company will not blindly follow the trend to relocate to wherever the labor and land are cheap. Instead, Motorola HK expands its operations in H.K. Motorola HK has about 3,000 employees including 1,600 engineers, professionals, and support staff. To maintain its competitiveness, the company follows the principle named as "QuST" (quality, speed and team work).

6.1.1.4. Assessment of the region

Motorola regards H.K. as a valuable center not only for its growth potential, but as a centrifugal point for technical support activities in Asia and the Pacific. H.K. has not provided adequate supplies of components and engineers for IC manufacturing and design. However, its geographical location and its communication and information infrastructure facilitate the company to procure components from Pacific-Asia, and to recruit engineers from Singapore, Britain and U.S. As technological complexity increases, the need for close customer liaison for prompt design modification also intensifies. The H.K. location is close to many major customers in the region. The company considers stable government and local tax rates favorable factors to hold a capital-intensive facility. Moreover, H.K. has the strategic advantage in penetrating the potentially high volume China

market. Motorola has a strong confidence in Hong Kong's future.

> The market-driven economies of Asia represent a system so successful that they will influence China's implementation of the one country, two systems concept to endow positive benefits to H.K. after 1997 (C.D. Tam, vice president and general manager of Motorola's Asia pacific division, Computerworld, 12-13-90:2).

According to the respondent, Hong Kong should go for "high-tech" production for two reasons. Firstly, the city has technical and business personnel who are exposed to the world business trends. Secondly, Hong Kong is an international center and has efficient communication and information networks necessary for regional and global procurement and subcontracting.

6.1.2. A subcontract assembler, Company S

6.1.2.1. Production organization

Company S is owned by a British conglomerate--"hong" which has had a long history of operation in H.K. and China. It was established in 1986 as a subcontract assembly house assembling microprocessors used in computing and life-saving equipment in aircrafts. It is financially independent of the mother company. Most of the customers are U.S. semiconductor companies (85.88% in 1993; West European, 11.11%; Asian, 3.06%). Usually, a contractor provides silicon wafers (already fabricated) to the company for assembly. 70% of the orders are obtained from large global semiconductor companies

and the orders are stable. The rest is obtained from smaller companies and the orders tend to fluctuate.

6.1.2.2. Technological development

The company is facing strong competition mostly from the South Korean companies which produces higher-end, higher quality products. It does not face direct competition from those of Thailand and the Philippines which concentrate on lower-end, lower quality products. To maintain its competitiveness, the company devotes efforts to improve quality, yield, delivery and communication[4]. The company has been upgrading the ICs through size reduction (smaller, thinner and more compact). The company does not invest in basic research; since it is too costly for a subcontract assembly. The quality improvement of ICs is handled by a technical support team composed of nearly 100 technicians. The whole engineering section (process control, technical support, design and development, industrial engineering) has 227 employees. The training of engineering for the semiconductor industry has started late in H.K. and the supply has been inadequate. The company is employing more than 50% of the technical support team from Malaysia, Singapore and the Philippines. To source new technologies, the company seeks licensing from R&D companies in Silicon Valley, California.

Over the past 8 years, the company has been expanding in lot size (from 67,430 square feet in 1990 to 132,940 square feet in 1994), manufacturing facilities and workforce but reducing inventory. It has adopted the Japanese JIT method,

by establishing a close relationship with the suppliers in Hong Kong to ensure quick delivery (same day order and supply) and to reduce inventory costs.

The company uses highly automated and specialized technology. It includes MIS (management information system), robotics, automatic inspection, automatic assembly, quality control circle, total quality management, electronic data exchange and real time data collection. All models are the latest revisions and the designs "representing the state of the art in assembly". To satisfy upcoming quality and cleanliness requirements, the company equipped the manufacturing facility with continuous particle monitoring and display, positive pressure in all clean room areas, and humidity and temperature controls/displays. The company has obtained the ISO9000 qualification for its production[5].

6.1.2.3. Employment

Over the years, the workforce has steadily increased, but at a rate much lower than that of machines and equipment. The automated manufacturing facilities are operating 24 hour/day at a 6-day/week schedule. The company is employing 751 workers as direct labor for assembly and 69 foremen for supervision. (Most of the low-skilled workers are new immigrants from China. Some of them have just arrived in H.K. and do not even speak Cantonese, the dialect spoken by H.K. Chinese.) The training department provides a few days' training to new workers and retraining when the workers are shifted to another. For quality assurance, it has 92 workers

and 36 quality assurance staff. For marketing, shipping and management, it has 174 staff. In total, the company has a workforce of 1349.

6.1.2.4. Assessment of the region

The company still maintains its operation in H.K. and has not planned to move to China, unlike the food industry in its corporate group. H.K. provides efficient communication and transportation that China cannot offer yet. Moreover, for a capital-intensive manufacturing facility, the fixed cost is much higher than the variable cost. The labor cost constitutes less than 20% of the total cost and therefore a reduction of labor is not an immediate concern. The overhead costs (machines, equipment, maintenance, etc.) are high in such an assembly no matter where it is located, and the relocation to China or Southeast Asian countries involves too high a cost. Moreover, China has been still constrained by the ban by COCOM[6] on the export of certain technologies to "communist countries".

According to the marketing official, H.K. should develop its circuit design capability. H.K. has a supply of high-quality technical labor cheaper than that of Japan and Western countries. The establishment of a design center takes much less cost than that of a wafer fabrication plant or a mask shop. It is much safer for global corporations to set up design processes in H.K. than in China when copyright regulations are largely ignored in China. H.K. can benefit from these investments in upgrading its design capability

since the local engineers can experiment their ideas. The local manufacturers can turn to these design centers for the service of design and this will help advance H.K.'s transition to higher value-added production.

The marketing officer points out that H.K.'s industrial policy has been inadequate in advancing the semiconductor industry. The government should have learned from its Taiwanese counterpart to support the semiconductor industry[7]. But she does not expect to change before 1997 since "the boss (H.K. government) will have to leave". Hopefully, after 1997, the Chinese and Special Administrative Region governments will create a long-term policy on the technological development of the whole country including H.K.

6.1.3. Company O, a logic chip manufacturer

6.1.3.1. Production organization

Company O, instead of owning expensive manufacturing facilities like the global corporations, has taken advantage of technological and human resources of China in the production of a popular model of logic chips[5]. To avoid the risk of heavy capital investment in wafer fabrication, the company has been subcontracting to Chinese state-run companies which are already equipped with the required production technology. Two are in Guiyang and two in Guangzhou and one in Shanghai (see Figure 9). The one in Shanghai is an equity joint venture, of which Company O owned 51% of the equity. All these companies obtained government loan ten years ago to finance the purchase of manufacturing equipment to modernize

their production. But they did not have enough local demand and the equipment was underutilized. Company O supplies the subcontractors wafers procured from the U.S. and Western European countries for wafer fabrication. The fabricated wafers are then shipped to Company O's wholly foreign owned subsidiary in the SEZ for labor-intensive assembly. Company O keeps an office for marketing and procurement and a storage facility (for wafers) in H.K.

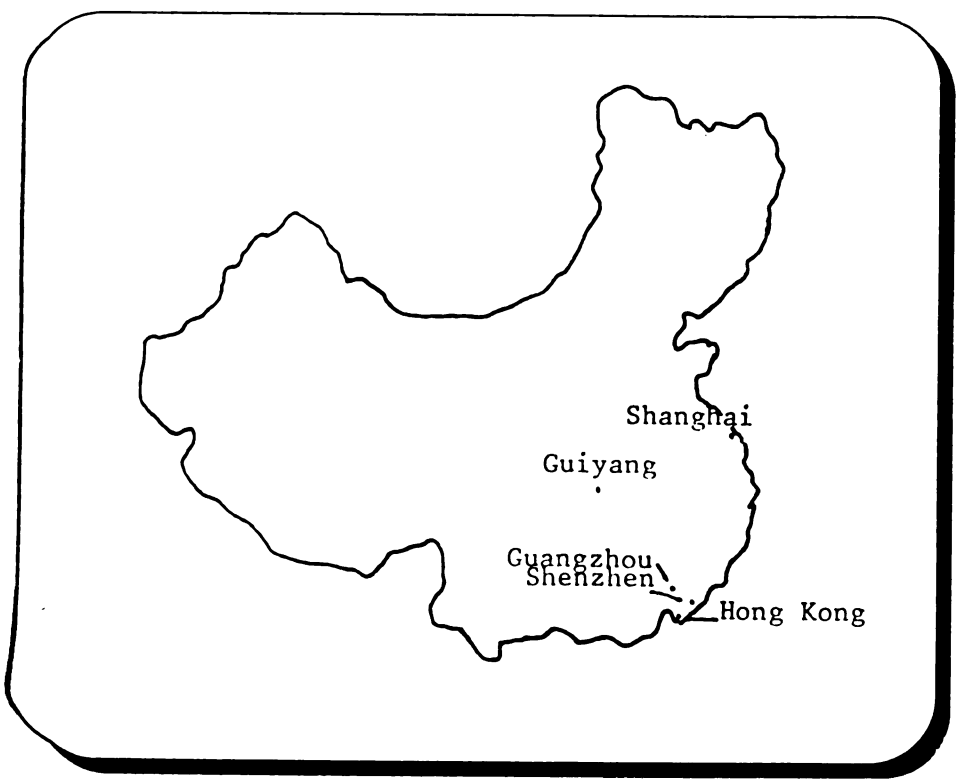


Figure 9: Company O's Production links in China

Some subcontractors are equipped with larger processing capacities than Company O requires. In this case, the company takes only 70% of the processed wafers and lets the subcontractors sell the rest in the domestic market. Since the subcontractors are state-run companies, they have channels to sell. They can then avoid underutilization of their machines. Through Company O, they can get high-quality wafers. In return, Company O does not need to pay processing fees or invest in expensive technologies.

Since the wafer is expensive, the company demands a high yield and low defeat rate from subcontractors. It has to understand the technology, management and production quality of a subcontractor. The usual practice is that it places a trial order. When the subcontractor brings out satisfactory products, both sides will enter into contract. The contract specifies the time of delivery, processing fee and compensation paid by subcontractors in case of defeats. However, the Chinese companies never pay compensations and so the company has to be very careful in selecting subcontractors. The subcontracting relationship is comparatively stable. The subcontractors invest heavily in equipment and demand stable orders. Company O, as a contractor, also has to invest heavily in wafer purchase and prefers a stable relationship.

Through subcontracting to various Chinese companies, company O could register as a small investment and hence get

quicker approval from the SEZ authorities. It can evade a number of taxes and save time by avoiding red-tape.

> There are many items of taxes. Small companies can avoid some of them by playing on personal connections with local authorities. Large companies, such as the listed companies and global corporations, can hardly afford the risks. Many companies simply register as new companies by taking on new company names in order to get tax privileges after their expiration. However, my company cannot do so because the Shenzhen government no longer welcomes labor-intensive investments. So, I have to follow the regulation to pay profit tax (managing director, Company O).

6.1.3.2. Employment

The company will keep its factory in the SEZ despite the rising labor costs. The SEZ set up is small; it is equipped mainly with testing equipment and tools costing about US$2 million. The assembly of ICs is labor-intensive and the workers need only a few days' training. It employs only about 50 workers, and can afford the rising labor costs. The H.K. managers can commute between the SEZ and H.K. on the same day.

The company no longer keeps a production facility in H.K. The office carries out marketing, procurement and product engineering design. The company employs 4 staff. The owner is the only engineer. The main market is H.K. (35%), China (30%), Southeast Asia and the U.S.

6-1.3.3. Assessment of the region

The company will keep its H.K. office. The advanced communication infrastructure and the free flow of information

are crucial for the purchase of high-quality wafers. A free flow of market information is essential for the purchase of high-quality wafers.

Overall, the local semiconductor industry has declined. The banks in H.K, supports only the booming industries but not those in crisis. Presently, the banks are not interested in electronics industry. H.K. has lost in its competition with Taiwan in technological development. In the semiconductor production, H.K. can perform wafer fabrication and mask making of only the lower-end chips that Taiwan has stopped producing. Southeast Asian countries have not been able to challenge H.K. yet since their comparative advantage lies in assembly but not design and wafer fabrication. In 3 to 5 years, H.K. can still maintain its competitiveness in manufacturing low-end chips. H.K. needs to upgrade its technology for higher-end semiconductor production since China will succeed in taking over the lower-end production in the future.

6.2. THE RESTRUCTURING OF COMPANIES ENGAGED IN LABOR-INTENSIVE PRODUCTION

The companies engaged in labor-intensive production identified in this research have moved all the manufacturing processes to the SEZ and kept the service functions in H.K. The following reports five case studies: (I) the Sanyo Group (II) Company R, a U.S. electronics component producer; (III) the Legend Group, jointly owned by H.K. and Chinese capital;

(IV) Company W, a H.K. audio product manufacturer; and

(V) Company M, a H.K. electronic toy producer.

6.2.1 The Sanyo Group

Sanyo Electric H.K. Ltd. (Sanyo HK) is a subsidiary of Sanyo Electric Inc. (Japan)[9]. The company coordinates the H.K.--southern China region. It was established in 1960 in H.K. It has two wholly foreign owned subsidiaries in H.K. (see Fig. 10) and has extended its production from solely radios in 1960s to cassette tape recorders, color TV sets, calculators, CD players, air conditioners, VTRs as well as supplementary components such as loudspeakers, electric motors, printed circuit boards, plastic molding, electric cables, CD pick up and CD mechanisms.

6.2.1.1. Production organization

Sanyo HK has established one WFO and six joint ventures in Shenzhen (see Fig. 10), and supported them by financial assistance, management structure and distribution channels. The choice of Shenzhen is due to its proximity to H.K. Sanyo HK has been supervising the operations in Shenzhen. All the assembly processes of semiconductors and consumer electronics except one production line (batteries) have been shifted to Shenzhen. Only 300 workers are left for that production line. Sanyo HK is in charge of the procurement and marketing of the finished products by its Shenzhen plants. H.K., as a financial center, is an ideal place to raise funds to support the operations in Shenzhen which are still running deficits.

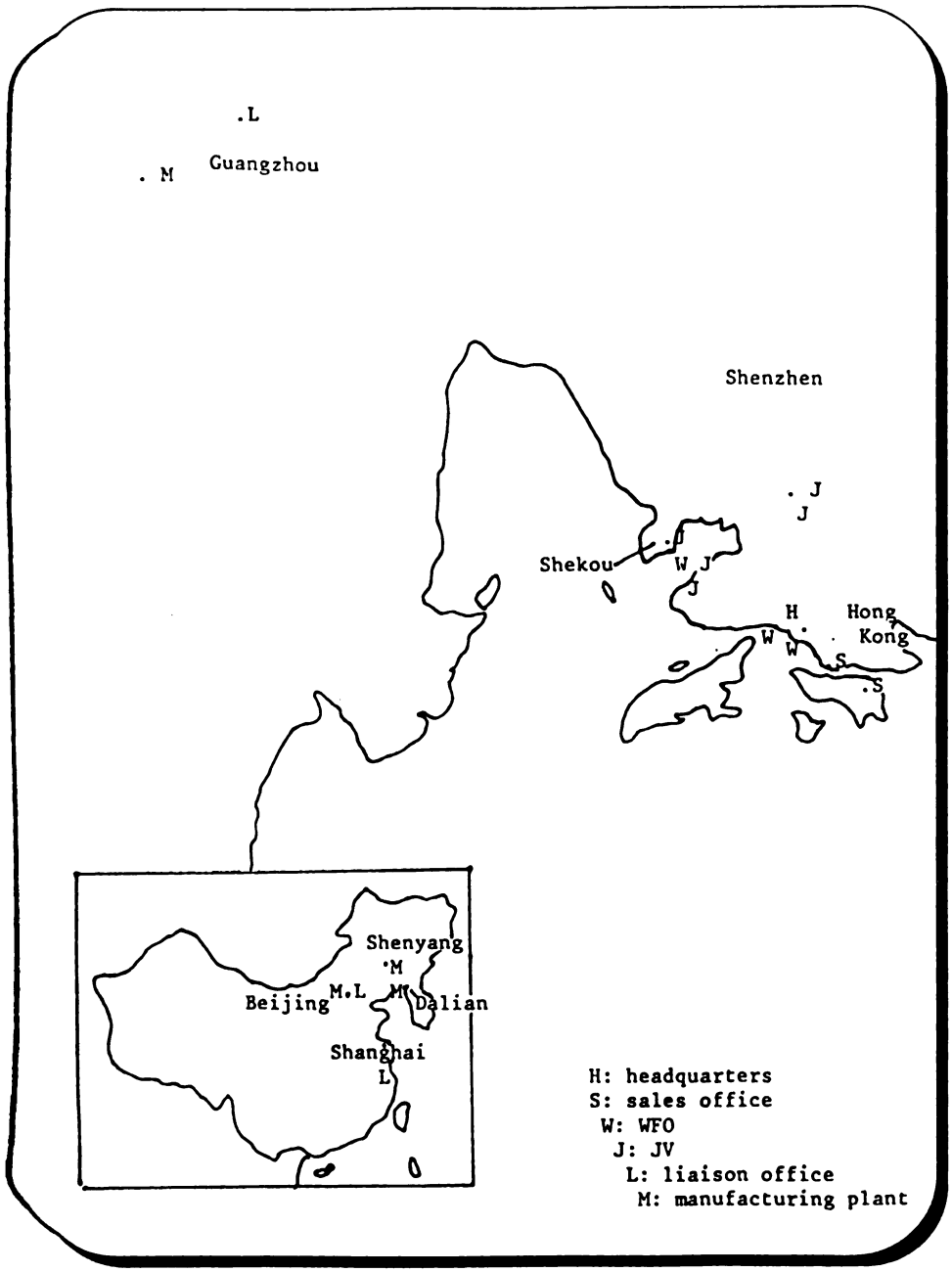


Figure 10: Sanyo's Facilities in H.K. and China

Two out of the six plants are equity joint ventures. Sanyo wishes to penetrate the Chinese domestic markets and the Chinese partner desires to obtain up-to-date technology. Sanyo looks for customers, supplies the production technology, supervises the production, and arranges exports. In return, the Chinese partner is responsible for worker management and domestic sales.

Huaqiang Sanyo Electronic Co. Ltd. (HQS) is an equity joint venture between Sanyo HK and Shenzhen Huaqiang Electronics Industry Corporation (a state company), each for 50% of the capital. It was established in 1984 with a capital of US$6 million and a 15-year contract. HQS has a slogan--"HQS will be made a model of joint venture of China". Its production has expanded from solely color TV sets to tape recorders and VTRs of Sanyo brand name.

HQS has obtained licenses to sell in the Chinese market: tape recorders (25% for domestic sales and 75% for export to U.S., Europe, Middle East, the former USSR), color TVs (50% for domestic sales and 50% for export to U.S., Canada, East Europe, Europe, the former USSR, U.K. and H.K.) and VTRs (100% for domestic sales). The General Manager points out the strong competition from the Chinese color TV manufacturers which can produce CTVs at a much lower cost and thereby sell at a lower price in the domestic market. HQS' products are of higher quality and more expensive but the Chinese market for luxurious products is small; the profit remains pretty low. The VTR production has been set up for two years and the

products are sold only within the Chinese domestic market. The cost of imported components is high. If the company exported the VTRs, it would need to pay transportation and marketing costs. All these would add up to become too expensive and the products would not be as competitive as those of their competitors.

6.2.1.2. Technology deployment

The contract specifies a technology transfer from Sanyo to its partner, Huaqiang Company. The tape recorder factory has 6 production lines and completes process equipment with an annual production capacity of up to 1.2 million sets of stereo radio recorders and audio components. The factory deploys precision instruments to strictly control the production process. The color TV factory owns two modernized assembly lines which annually produce 600,000 color TV sets. The factory is equipped with core automatic testing equipment and semi-automatic insertion machines.

To ensure an adequate supply of high quality parts and components for the production of the three products, the company set up a plastic injection and coating factory in 1985. It imported from Japan eight large injection machines and four coating robots to actualize full automation. The factory produces cabinets for color TV sets and tape recorders. Since it is equipped with a capacity higher than that demanded by HQS, it takes orders from other companies. HQS also established an automatic insertion factory in 1991 which is presently equipped with 14 fully-automatic insertion

machines for printed circuit board (PCB) units and has a 20-hour work system in shifts. It engages in the insertions of components parts for PCB units of color TV sets and tape recorders for the company. Workers and foremen are trained to work with the sophisticated equipment.

Other than the hardware and quality control, a technology transfer includes the organization of management (see Figure 11). The general manager is designated to be a Japanese from Sanyo and the deputy general manager is from Huaqiang. For individual departments, the chief is from Huaqiang and the deputy chief is from Sanyo (Fig. 12). The Japanese staff has a higher mobility than the Chinese since the Japanese may return to Japan at the end of their appointment. Therefore, the departmental chiefs are allocated to the Chinese to sustain continuity. At the senior level of management, HQS has 10 from Japan, 7 from H.K. and 40 Chinese officials ("ganbu") from Huaqiang.

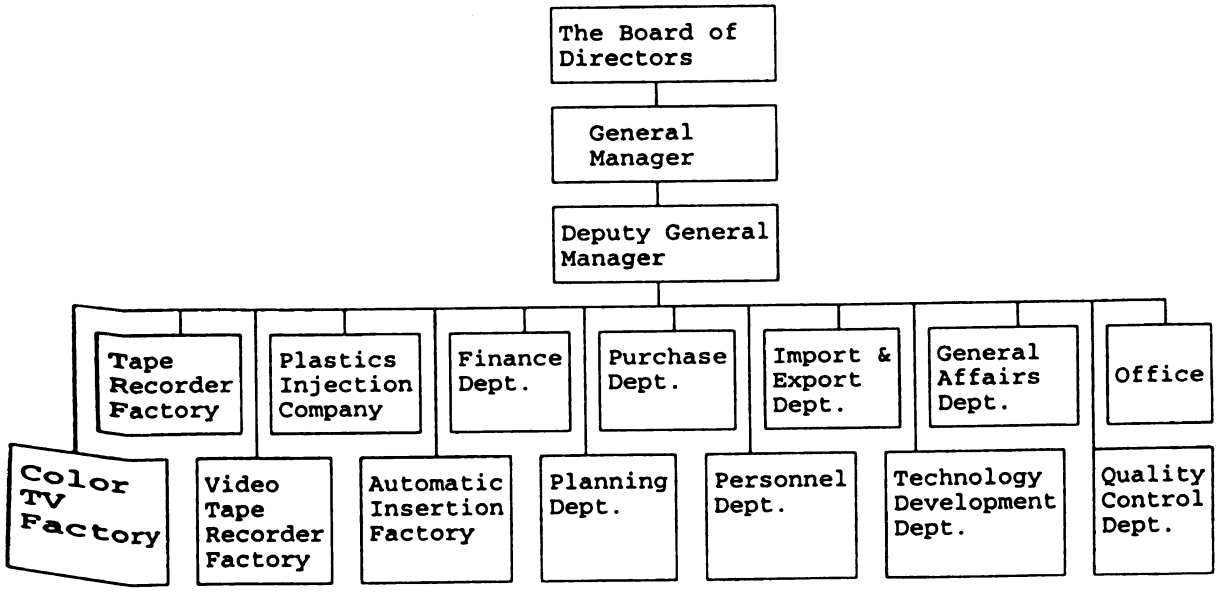


Figure 11: Organization Chart of Huaqiang Sanyo

6.2.1.3. Employment

HQS employs 1,600 employees. For the workers, the sex ratio is surprisingly about 1:1 (also observed during factory visit). HQS obliges to the quotas imposed by the Labor Service Company on the employment of workers from outside the Guangdong Province. It provides 1-year contract or 3-year contract to its workers.

The General Manager thinks that the management of labor in Sanyo (Japan) is much more paternalistic and hierarchical than that in HQS. In HQS, the working atmosphere is much more relaxed. The respondent further points out that H.K. manufacturers have advantages in language and culture as compared to the Japanese concerning the management of labor. The control over workers is more lax in HQS as compared to that in H.K.-owned factories in Shenzhen. The General Manager comments that China has to improve its labor quality. Presently, HQS can actualize only 60% of its capacity owing to the low quality of labor. The turnover rate of engineers is rather high since the engineers often hunt for better-paid jobs after gaining some experience.

6.2.1.4. Industrial linkage

Companies granted a license to sell in the domestic market are required to increase the local content of the products manufactured. Over the years, HQS has reduced its reliance on the Japanese vendors and procured components and raw materials in Guangdong Province. Their quality is not as

good as that of the Japanese vendors. But the company is willing to make compromise on that.

Subcontracting plays an important role in the procurement of HQS. When HQS confirms a list of procurement, it will deliver it to Sanyo HK. Sanyo HK will procure from Japan, H.K., Southeast Asian countries through direct purchase and subcontracting which constitute 70%. The rest is procured by HQS from within the Guangdong Province through direct purchase and subcontracting. HQS is linked to 100 subcontractors, most of which are medium-sized plants of 500 workers. They manufacture parts and components according to the specifications of HQS. HQS performs assembly and testing. HQS has a technology development department which is responsible for collecting information on the technological level of the parts-producers in China.

HQS at times rents out its equipment to subcontractors to facilitate their production. It sends personnel to inspect the subcontractors and to provide technical guidance. The inspection is on a regular basis. At times the company does reject products of unacceptable quality and demands an improvement.

To guarantee a supply on time, HQS provides subcontractors both a long-term plan and a short-term plan. It informs each subcontractor 3 months before it places its order and sends a memo a month before its due date. The orders HQS places have been rather stable. The price is negotiated and both sides can usually reach compromise.

The General Manager complains about delays in delivery by the Chinese suppliers. The quality is rather unstable and there is often an increase in price because of the depreciation of the RMB. Nevertheless, HQS does not dismiss subcontractors but tries to strengthen its technological guidance and to maintain a longer term relationship.

6.2.1.5. Assessment of the region

H.K., to Sanyo and the other Japanese producers based in H.K., has changed from being a cheap labor site to an observation tower of the Chinese market since China's adoption of the open door policy in 1978. Sanyo HK is keeping an eye on the political development in China. If H.K. maintains the status quo, Sanyo will maintain its operation in H.K. China is still a "communist" country in the eyes of Sanyo and many other Japanese companies, according to the Chairman of Sanyo HK.

6.2.2. A U.S. electronic component manufacturer, Company R

6.2.2.1. Production Organization

Company R, a subsidiary of a U.S. company, was established in H.K. in 1984 to produce DC-DC converters. The company has been managed by H.K. personnel (including the managing director who accepted my interview). In the first 3 years, it carried out production with a workforce of roughly 150 people. Since the production processes were labor-intensive and required young female workers, it started its first wholly foreign owned subsidiary in the SEZ 7 years ago to take advantage of the cheap labor supply. When it had

orders beyond the production capacity of its branch plant, it subcontracted the surplus order to a H.K.-based manufacturer nearby. After one and a half year, it established another wholly foreign owned subsidiary. When its market expanded and had more orders, the wholly foreign owned subsidiary subcontracted them to another H.K.-based manufacturer nearby. The same process took place every one and a half year and presently it has four wholly foreign owned subsidiaries and four subcontractors. The company subcontracts 30% of its orders to these subcontractors.

There are reasons for having four wholly foreign owned subsidiaries instead of one. Firstly, land near to the already established wholly foreign owned subsidiary was not available. Secondly, the company can minimize risks (breakdown in production due to natural disasters, strikes and government intervention) and maintain flexibility. Thirdly, the company does not need to afford more production facilities and staff to manage more workers. Fourthly, when the business fluctuates, the company does not need to lay off its own labor.

The subcontractors are overwhelmingly dependent on the company. Nevertheless, they have their survival strategy against market fluctuations. For example, if they have an order which needs 200 workers, they will employ only 150 workers and pay them in H.K. dollars for overtime work. When the order is reduced, the company does not need to lay off its workers.

The company has tremendous influence over the subcontractors; it supplies all the technical tools, testing equipment and quality control equipment needed for the production to the subcontractors. The subcontractors also need to do production report in the same format as the company's WFO.

Over the years, the company has not reduced the workforce in H.K. It has increased the lot size. It has a workforce of 100 to do pilot runs and testing of the products. After the pilot run, the whole production is carried out in the branch plants and the subcontract assembly houses. The assembled products are then transported back to the H.K. office for testing, and distributed to its customers worldwide.

The H.K. office carries out marketing, distribution, material control and purchasing, while the U.S. headquarters carries out design and development, customer relations, finance and marketing. Over the years, the H.K. office has succeeded in getting customers in H.K., Taiwan and South Korea and has taken over the marketing in Asia. The H.K. office employs 80 staff. In recent years, it has employed a few Filipino engineers by offering a salary 50% lower than that of a H.K. engineer.

6.2.2.2. Technology deployment

With the relocation of manufacturing to China, the company spares 50% of the production cost. Nevertheless, the finance is controlled by the U.S. headquarters. The company cannot put the profit to invest in design processes in H.K.

The production is labor-intensive, and involves only simple tools. In order to guarantee the quality of the products, the company set up a training department to train the workers. Each new worker receives two-to-three weeks on-job training. For the first two years, each worker receives retraining once a year. The training department keeps record of the attendance of workers. It also invites the supervisors of the subcontractors to attend training and they are expected to bring the skill back to their own production. The company has obtained the ISO9000 qualification.

6.2.2.3. Employment

About 10 managers are sent by the H.K. headquarters to live in the SEZ to supervise the wholly foreign owned subsidiaries. The wholly foreign owned subsidiaries employ 50 engineers altogether for technical support and each is paid about RMB 1,500 (US$170). They have a workforce of 6,000 and the 4 subcontractors have a workforce of 3,000 in total. 70% of the workers are from Guangdong Province and 80% are female workers. Each is paid a monthly wage of RMB350 (US$40) and about RMB550 (US$65) including overtime pay. The company can freely recruit workers and reports to the Labor Service Company only afterwards. It is very easy to get workers--simply putting a notice at the factory door or in local newspapers. The company also informs its workers who will introduce their relatives or friends from their home villages. The turnover rate is especially high after Chinese new year; 20% of the workers do not come back from their home villages

after their vacation in Chinese New Year. The monthly turnover rate is about 5% for the rest of the year.

6.2.2.4. Industrial linkage

The company does not purchase parts and components from the Chinese suppliers. According to the managing director, the component sector in Shenzhen or the whole Guangdong is "underdeveloped": only simple components and parts are available; the items are limited; the supply is unstable (e.g. due to floods in summer 1994); and the quality is poor. The Chinese suppliers do not offer after-sales service and are not customer-friendly.

The company obtains from its U.S. headquarters supplies of critical components such as magnetic cores and ferrite cores. It procures the rest increasingly from the suppliers of Taiwan, South Korea and H.K., and the H.K. suppliers located in Shenzhen. The company purchases only packing materials from China.

6.2.2.5. An Assessment of the region

The company will maintain its operation in Shenzhen. The workers are also more obedient and learn rather fast. The company will also keep its operation in H.K. which provides efficient communication and transportation infrastructure. Presently, the H.K. office can communicate with the U.S. headquarters through computer networking and fax. The H.K. office is also responsible for coordinating production in Shenzhen and the Philippines. Shenzhen lacks the infrastructure in finance, commerce and banking. It may take

more than 10 years to achieve the standard that H.K. has presently achieved.

The company has been keeping a close look at the political development of China. China remains a "communist country" in the eye of the U.S. headquarters. After the Tienanmen event in 1989, the company has established a production plant in the Philippines. The plant remains small, with a workforce of 600. The company attempts to diversify the risk by keeping a back-up operation elsewhere in Asia. In case of political instability in China/H.K., the production can be shifted to the Philippines and it will not be totally stopped. This is also a strategy to attract customers. Many large customers have more confidence in placing orders to a company which has a back-up factory elsewhere and is not totally dependent on China. Furthermore, the U.S. Congress has been debating the renewal of the most favored nation status to China over the past years. If China did not get a renewal of the MFN status, the company would have to pay much higher tax for its exports to the U.S.

According to the Managing Director, the low profit tax and the absence of foreign exchange control of H.K. are very important to attract foreign direct investments. The labor-intensive processes will be taken over by China but the more capital-intensive industries will stay in H.K. With the access to abundant supplies of Chinese labor, H.K. will remain competitive to its counterparts in Southeast Asian countries.

6.2.3. Hong Kong Legend Co. Ltd.

The group is a joint venture of Hong Kong and Chinese capital[10] set up in 1988 in H.K. The Group has been seen as a successful Sino-H.K. partnership combining the marketing expertise of the H.K. partners and the technological back-up by the Chinese partner. The Group has just been listed in the H.K. Stock Exchange. Since its establishment, it has focused on global trading--being an agent for world-class computer vendors in the Chinese market and selling its own OBN products through its 20 sales offices in U.S., Canada, U.K., Germany, the Netherlands, Australia, Singapore, Malaysia and Taiwan. The overseas offices also keep the Group informed of local market needs, new technologies, market trends and competitors' activities, and thereby enable the Group to anticipate and respond effectively to changing market demands.

6.2.3.1. Production organization

In 1988, Legend acquired a factory space of 3,910 square meters in an industrial district (Chai Wan). It still performs assembly and testing of the company's products. In 1993 it moved its headquarters to a new 2,636 square meter office in a commercial building in Quarry Bay. Warehouse and sales operations continue to be based in the industrial district.

The product life-cycles of computer products are very short; each product's life cycle is measured in months rather than in years. In order to keep up with customer demand, the Group has established an international R&D team with software

and hardware engineers in H.K., Shenzhen and San Jose (California, U.S.) To date the Group has designed two ASIC chips and over 50 models of motherboards and add-on products.

Legend is one of the few companies in H.K. that has managed to work around the immigration restrictions on workers from China. Legend rotates a group of 10 engineers from China through its H.K. headquarters. All but about five of the 30 engineers that Legend has in its H.K. and Shenzhen facilities are from China. Thanks to the availability of Chinese engineers, Legend can have a much higher flexibility. For example, when it has developed a new mother-board, it can make five proto-types and decide the last minute which one to produce. The Group is presently taking steps to seek ISO 9000 accreditation.

The majority of the production has been carried out in the SEZ. Shenzhen Legend is an equity joint venture. 70% of its shares is owned by the Group, 20% by Beijing Legend, and 10% by Shenzhen Science and Industry Park Corporation (owned by Guangdong International Trust and Investment Corporation, Academia Sinica and Shenzhen Municipal Government).

Shenzhen Legend has a floor area of 3,364 square meters, more than 1000 workers and the latest SMT[11] production machinery. It operates at a schedule of 5 and 1/2 day per week with 1 shift (8 hours). Most of the workers are willing to work overtime to earn higher wages.

To minimize capital outlay and factory overheads, and to provide flexibility, the Group subcontracts the production to

local subcontract assemblies in Shenzhen. Legend has 6 long-established subcontractors, each with a workforce between 50 to 100. The subcontractors handle 60% of its production requirements. Nearly every order it receives, it distributes to subcontractors. They can also take other companies' orders; only that Legend's order is the priority. The company plans to keep the present number of subcontractors since it is difficult to maintain many subcontractors. The Group hopes that the production quality of subcontractors will improve and this will reduce its burden in searching for new subcontractors. Legend gives subcontractors a briefing for each coming year and one prior to each order.

6.2.3.2. Technology deployment

The production is labor-intensive. Legend provides a sketch with engineering notes to the subcontractors. The company sends personnel for quality control in the subcontractors' factories. To ensure the subcontractors' production quality, the group rents out machinery to subcontractors and deducts the rent from the processing fee it pays.

The design center of H.K. has been relocated to Shenzhen Legend in early 1993 to take advantage of the low-cost engineers who earn 6 times less than their H.K. counterparts. 50 engineers are employed in Shenzhen Legend. The H.K. project managers keep constant contacts with the vendors (such as Intel, IBM, etc.) and the R&D center in San Jose and detect the market trends. The Shenzhen design center will then

design the corresponding parts to support the vendor's new products.

6.2.3.3. Industrial linkage

The respondent has a positive evaluation of the Chinese components and the company has increased the purchase of Chinese components. Nevertheless, the company does not depend on the Chinese suppliers. Through the overseas offices, the Group can overcome local supply constraints by procuring parts and components internationally for optimal delivery and price.

6.2.3.4. Assessment of the region

The respondent claims that Legend has surpassed its counterparts in H.K. and is presently facing only three Taiwanese companies. The competitors can put products to market a month faster than Legend, and thereby occupy a larger share. The Taiwanese manufacturers are becoming more competitive by moving their production bases to southern China to reduce their manufacturing costs and market prices. Nevertheless, Legend, being based in H.K., can maintain a more efficient control over their subsidiaries in China than its Taiwanese competitors.

Legend will keep its headquarters in H.K. which has an efficient communication infrastructure and a concentration of representative offices of high-tech companies. Legend can stay current with the market situation. To strengthen the manufacturing capacity, the Group is setting up a printed circuit board (PCB) plant in Danshui, Huiyang. This is to

reduce its reliance on the Taiwanese subcontractors on their supply of PCBs. The Group is also building 2 plants in Dongguan and Huiyang to produce motherboards and add-on cards. This will provide capacity to support the expanding production orders and prevent an overloading of the Shenzhen plant since the labor costs in Shenzhen are increasing.

To strengthen its design capacity and reduce its variable costs, the group is constructing a new Science and Technology Park in Huizhou, the construction of which is scheduled to complete in 1996. It will house R&D facilities and a 50,000 square meter manufacturing facility. The Group believes that an integration of design and manufacturing will help shorten both the development time and the time to market. Research engineers working with plant engineers can advance their designs of new products and production methods.

The Group is planning to expand its ASIC design and OBN production capacity. By designing its own ASICs, it reduces its reliance on U.S. or Japanese suppliers and thereby the costs of production. Currently, Legend has a Chinese professor designing ASICs. Legend is underway to form a joint venture with Shanghai Changjiang Computer group and Fudan University to establish an ASIC design center in Shanghai. Shanghai has a high-tech environment--universities and technical institutes and an abundant supply of engineers. The Group provides efficient management and market information, and the Shanghai partner offers human resources. However, the engineers in Shanghai are good at theoretical knowledge but

weak in commercial technological applications. Other than tapping Shanghai's brain power, Legend also sends engineers to Taiwan to obtain market and technology information.

The respondent comments that the H.K. government's support for the industry has been inadequate. He compliments the Taiwanese government's efforts in supporting the R&D of the industry. For just 10 years, a great improvement in Taiwan's capacity in the industry is witnessed. H.K. manufacturers, without government support, remain unable to significantly upgrade their production and design technology.

6.2.4 Company W: An audio product manufacturer

6.2.4.1. Production Organization

Company W works as an OEM supplier of audio products, mainly for ten U.S. customers. The business is rather unstable and it has to compete against other H.K. suppliers for contracts order by order. To maintain competitiveness, it seeks to cut prices and costs of production, and to develop new models and features to adjust to the market of changing consumer tastes. About 60% of the production cost are spent on critical components such as ICs imported mostly from Japan and to a lesser extent, South Korea. The cost of critical components cannot be cut down. What can be reduced is the rent and labor given the abundant supplies in the SEZ and the Pearl River Delta areas.

Manufacturer W has started to subcontract assembly work to Chinese factories in Guangzhou from 1981 to 1983, and Dongguan during 1983 to 1984. Since 1984, it has shifted its

subcontracting to the SEZ so that the H.K. managers could commute between H.K. and the SEZ on the same day. He closed his small workshop in a residential building (in Jordon District, Kowloon and dissolved all the 50 workers in 1992. All the whole production processes were then moved to the Shenzhen factory, and the finished products were all for export.

The SEZ government demanded manufacturer W to change the processing and assembling contract to wholly foreign owned subsidiary or joint venture in 1992 when the contract expired. The manufacturer decided to set up a cooperative joint venture for which he could get a quicker approval from a lower level of government authority. The Chinese partner contributed only the land for a factory building. In practice, manufacturer W controlled the whole production, procurement, technology and employment. He obtained a 15 year contract, a tax exemption of 3 years and a profit tax of 18% afterwards. The scale of investment was HK$5 million. He pays a monthly rent of RMB 1.5/square feet for the 20,000 square feet factory.

The HK office carries out marketing, distribution, procurement and storage of more expensive components. The manufacturer has just relocated the office to a new commercial building in a newly developed, less congested district, and pays 50% higher rent. These modern facilities and outlook are believed to project an image of a high quality management to foreign customers. Presently, the manufacturer is employing 4 administrative staff and 4 engineers (one is recently

recruited from China). The engineers are employed for technical support. The manufacturer clarifies, "H.K. manufacturers do not do R&D. Nearly all H.K. manufacturers copy the designs from trade journals."

6.2.4.2. Technology deployment

Manufacturer W moved all the production tools from H.K. to its SEZ operation. Many of them have been used for 8 to 10 years. The production is confined to assembling and testing. Assembling is largely labor-intensive--fitting hundreds of tiny parts and components. They are "tools" (such as stone ovens, wire cutting tools) rather than "machines". Testing involves more sophisticated and semi-automated equipment. 60% of the tools and equipment were imported from Japan, 25% from Taiwan and 15% were purchased in H.K. The costs ranged from US$800 to 7,000 a piece. Since the electricity supply is not stable in Shenzhen (China), the tools need repairing after two years in operation.

Manufacturer W points out that a high level of automation is not appropriate for his production; automation is meant for standardized mass production, and not cost-effective for small-scale production. The order he obtains is usually small, and each contractor has some slightly different specifications in functions and appearance of the same product.

The workers are required to undertake a few days' on-job training which focuses mainly on the specific tasks they undertake. The company does not have a training department

and does not keep records of workers. Systematic training as such is commented as "not needed" due to the low-skill requirement of the jobs and the high mobility of workforce.

6.2.4.3. Employment

Manufacturer W stays at his H.K. office during Monday to Thursday and his factory from Friday to Sunday, which operates during weekends. He sends two H.K. managers to stay at the factory to supervise the daily production. He employs 10 Chinese managers and staff at an average salary of RMB2,000 (US$230) each, 8 engineers at RMB1,500 (US$170) each, and 600 operators at RMB600 (US$70) each. The managers and engineers are given contracts but not the operators. The manufacturer offers contracts to the Chinese managers and engineers. However, many Chinese engineers quit when they succeed in finding better-paid jobs.

Since the manufacturing deals with tiny parts, manufacturer W requires workers to have good eyesight, patience and discipline, and preferably female which account for 85%. The manufacturer relies on the Labor Service Company to look for workers. The Labor Service Company sends inspectors at different administrative levels to inspect his factory quite often to see if the factory violates the regulations. The manufacturer finds it difficult to give bribes to all the departments and would rather comply with the regulations.

The manufacturer complains that the quality of workers is deteriorating. A few years ago, the supply of local labor was

abundant and he could choose the more motivated ones. At present, workers with higher educational and skill levels take jobs in the service industry, leaving those finishing Grade-9 education for the manufacturing jobs. He attributes the inefficiency of Chinese workers to their "mentality" and "education". He comments that the productivity of the H.K. workers is two times higher than that of the SEZ workers. The Chinese workers do not cooperate with the management.

> They think that the boss is exploiting them and they feel like being prisoners. Discipline is hard to enforce. For example, I have tried to stop workers from spitting in the workplace. In the beginning I imposed a penalty of 10 Yuan on each violation. It was ignored. I then increased the penalty to 20 Yuan and it was ineffective until I imposed a penalty of 50 Yuan. They feel that they gain 50 Yuan if they are not caught after spitting. They feel that they gain if they are not caught when they are not working. They are greedy. If I can find 300 H.K. workers of 20 years old, I would rather manufacture in H.K.

6.2.4.4. Industrial Linkage

Critical components constitute 60% of the production cost (and the labor cost accounts for less than 20%). The OEM contractors usually supply the plastic moulds for the audio products. The company needs to import ICs from Japan and South Korea, and purchases the ready-made parts from the Taiwanese and H.K. manufacturers. Recently, many H.K. and Taiwanese parts and components suppliers have set up branch plants in Shenzhen to provide timely delivery to the end-users. Manufacturer W can place 80% of the orders at the suppliers' H.K. offices and get the delivery of parts from the

SEZ branch plants of the suppliers. Manufacturer W rarely uses Chinese suppliers since their items are limited and the quality is low. The supply has been unstable especially during flooding in summer.

6.2.4.5. Assessment of the region

Manufacturer W will maintain its office in H.K. He thinks that China and H.K. will be politically stable. The communication and banking service in H.K. will be superior to that of Shenzhen in 20 years.

The manufacturer comments that the H.K. industrial policy represents a "false democracy", allowing unfair competition in the industrial sector. Many listed companies cut prices of products to increase the sales since large total sales can attract buyers to buy the companies' shares. To stay competitive, the small-medium companies are forced to cut prices. After a year or two, the listed companies themselves secure losses by selling products at prices lower than the production costs. The shareholders suffer from losses. The small-medium companies suffer from low profits.

The Hong Kong electronics industry has not faced competition from Shenzhen's. The local entrepreneurship for industrial development has not prospered in Shenzhen. Some engineers leave their jobs and start their own business but not in the electronics industry. It is difficult for them to run an electronics factory for exports owing to the limited market information, banking support, and foreign exchange to import critical components.

Manufacturer W complains about the numerous items of tax such as tax for growing trees and tax for keeping the city clean. He finds the costs of operating in the SEZ higher than in the Pearl River Delta areas. He finds it very difficult to get a taxi to his factory since few taxi drivers are willing to take him for only a 15 minutes' drive. The SEZ does not enough telephone lines; it was rather easy to make a call to the SEZ 9 years ago but now the lines are always engaged.

He has planned to relocate further to Ping Wu in a mid-1997, since Ping Wu offers cheaper land and labor supply. He has already identified a Chinese partner and is considering to form an equity joint venture, sharing management with the partner. Nevertheless, he does not intend to penetrate China domestic market owing to the difficulty to get a license to sell.

The manufacturer does not consider setting up production in Southeast Asian countries owing to the language problem and unfamiliarity to the countries. China has been granted the most favored nation (MFN) status by the U.S. government and this gives China a big advantage over the Southeast Asian countries to attract H.K. investments since most investors are dependent largely on the U.S. market.

6.2.5. Company M: an electronics toy manufacturer

Manufacturer M graduated from the Nanking Aircraft Institute with a degree in airplane engineering. He emigrated to H.K. after the Communist takeover of China, and worked in his father-in-law's company, a listed company manufacturing

consumer electronics products. He established his own company in 1982 manufacturing electronics toys on OBN basis (30% of the production) and OEM basis (70% of the production; for European, Japanese and to a lesser extent, the North American customers).

6.2.5.1. Production organization

Manufacturer M started experimenting the processing and assembly investment in the SEZ in 1986. He established a wholly foreign owned subsidiary and moved all his production processes to the SEZ in 1990. He bought a piece of land to build a 5-floor factory building (10,000 square feet) including dormitory on the upper two floors and storage facilities.

The manufacturer has dissolved the 100 workers in his H.K. factory in an old residential-industrial district (Hung Hom) and set up his office in a commercial-tourist district (the New Harbor Center in Tsimshatsui). The H.K. office is responsible for finance management, marketing and procurement, and design and development. He employs 8 engineers and 7 managerial staff in the H.K. office. By relocating the production to the SEZ, he has spared 20% to 30% of the production cost. He devotes more capital into the design and development of new products, new features and models.

6.2.5.2. Technological deployment

The SEZ factory uses mainly the manufacturing tools and testing equipment transferred from H.K. On top of that, the manufacturer boosts his new purchase from Japan--a set of

surface mount technology (costing US$59,000). This investment is to support the OEM production for a Japanese customer. The Japanese customer has sent an engineer to the factory to supervise the production. The company is also applying for ISO9000 and hopes to get it in a few months.

6.2.5.3. Employment

Manufacturer M visits his SEZ factory twice a week, especially during weekends. He sends 3 managers from H.K. to stay at the plant to supervise the production. He employs 6 Chinese managers to manage the workforce and 12 engineers to run the production. He offers contracts to most of the Chinese managers and engineers to stabilize the workforce. But most Chinese engineers quit when they succeed in finding better-paid jobs. Presently, he employs 800 workers, and 90% are females and 80% are from outside Guangdong. When asked how he can exceed the quota of employing migrant workers, he answers, "Some local connections help smooth the process."

The company does not rely on the Labor Service company to look for workers. The management simply puts an advertisement at the factory doors or on public notice-boards, or asks the existing employees to introduce relatives and friends from their home villages to fill the vacancies.

The production is run on a 6-day/week and 8 hour/shift schedule. In high seasons, the production is run on two to three shifts/day. The manufacturer asks his own workers to do overtime work rather than using subcontractors. Overtime work is often and the overtime wage is paid in HK dollars. The

workers are not offered contracts and are provided only accident insurance. Maternity leave is not offered and pregnant workers have to return to their home villages. Recently, it gives a maternity leave of 60 days to a female supervisor but this is a special case.

The turnover rate of migrant workers has stood at a high level of 20% after the Chinese New Year holidays; workers do not return from their home villages. Manufacturer M has improved the working environment (installation of air-conditioning in workplace), accommodation and canteen in order to enhance the sense of belonging among the workers. He has built a "Karaoka bar" on the top floor of the dormitory as entertainment. (The policeman, my guide, told me after the interview that this factory's fire escape exit is often shut to prevent workers from stealing toys out of the factory.)

By law, each foreign investor has to employ a "Chinese factory-in-charge" to run his/her operation. Manufacturer M pays RMB 20,000/year (US$2,300) to the Chinese Cheong-zheong, a party member, in exchange for his non-intervention. He allocates the task to oversee the industrial safety of the plant to the factory-in-charge.

6.2.5.4. Industrial linkages

According to the manufacturer, each of his electronics toy contains more than 1,500 components. He has to oversee the quality, delivery and price of components. Presently, 80-90% are supplied by H.K. suppliers or H.K. suppliers in

Shenzhen. He does not use the Chinese components as their quality is low and the delivery is poor.

6.2.5.5. Assessment of the region

Manufacturer M strongly believes that China will maintain the prosperity of H.K. He argues:

> The people who are worried about 1997 do not understand the Chinese government. H.K. manufacturers are employing 3 million in Guangdong Province (but actually close to 5 million, according to a H.K. Polytechnic lecturer friend of mine). The economic growth of the Province has been led by H.K. investments. H.K. is enjoying a very high living standard. China cannot afford rocking the boat and bears the burden of feeding the H.K. people. It may be as expensive as feeding the whole Guangdong Province).

The manufacturer believes that if the democratic parties do not demand too much "democracy" and appear subversive in the eyes of the Chinese government, H.K. will be kept intact.

HK's electronics toys industry is the largest in the world. It faces no competition from Chinese manufacturers as their linkage industry is very poor. The manufacturer expresses that he will not shift his investment from manufacturing to purely trading although H.K. is losing its advantage in manufacturing but enjoying a growth in commerce and trade. Maintaining a manufacturing capacity rather than engaging only in trading provides a greater flexibility for an investor.

The manufacturer comments that the industrial policy of H.K. is inadequate. The industrial policy has failed to respond to the technological changes of the electronics

industry. The low-end electronics industry is saturated and the development of high-end products is not enough. The competition of low-end manufacturers is so big that the profit margin becomes very low. The H.K. government should learn from the Taiwanese and Singaporean governments to assist in technological upgrading.

He complains that Shenzhen's infrastructure building cannot cope with the economic growth. He has to install an electricity generator as a back up against the frequent electricity black-out. The management of transportation service is very poor. Most of the roads are under construction. Some authorities monopolize some sections of a road and impose RMB10 to 20 car wash fee even if one does not need the service.

Whether he will invest in the SEZ in the long run depends on the privileges offered by local governments. He complains that the SEZ authorities impose too many items (more than 10) of taxes, and corruption is serious. To improve the investment environment, the SEZ authorities should reform the bureaucracy and cultivate the concept of the rule of law. But he will not set up production in Southeast Asian countries owing to the language problem and unfamiliarity to the countries.

The findings, based on the documentation research, interviews and informal telephone conversation with manufacturers, confirm some and challenge some of the hypotheses in the existing literature. Contrary to the

expectation that the city state will transit to high tech production, the electronics industry lacks capital deepening and technological upgrading. In the semiconductor industry, most global coporations have shifted from production to sales, withdrawn, or moved the production to elsewhere in Asia. Apparently, assembly and testing functions are reduced. Research and development remains limited. Only three global companies maintaining the state-of-the-art facilities and the local companies still keep the production in the city.

As commonly known, the labor-intensive industries are largely moved to the SEZ and even further north. What I recognize is that most companies have moved the whole production, rather than simply assembly to SEZ. H.K. has undergone deindustrialization at a much higher rate than the other newly industrialized economies.

7. AN ANALYSIS OF THE IMPACTS OF INDUSTRIAL RESTRUCTURING

7.1. INDUSTRIAL RESTRUCTURING AND SUBCONTRACTING

The case studies show diverse restructuring strategies of electronics manufacturers operating in H.K. and reveal a changing division of production between H.K. and Shenzhen. The labor-intensive production has largely been moved away from H.K. to the SEZ. The restructuring of the capital-intensive undertakings can hardly be generalized--companies running the "state-of-the art" production facilities tend to maintain their operations in H.K.; the majority has changed to trading and providing after sales service or regional coordination; and only a few did relocate their production to the SEZ.

The relocation of labor-intensive production processes to the SEZ mirrors a spatial extension of the industrial subcontracting. Subcontracting refers to a situation in which a company offers subcontract requests to another independent company for producing or processing a component or part according to the specifications it provides. Subcontracting differs from the mere purchase of ready-made parts and components from suppliers in that there is an actual contract between the two participating companies laying down specifications for the order (Friedman, 1977).

7.1.1. Capacity subcontracting

The H.K. management of capital-rich companies tend to set up operations of a scale smaller than one that they can afford. The operations are small in terms of capital outlay although the workforce may be large because of the labor-intensive nature of the production. It is easier and faster to get approval for a small investment than a big one. It is also easier to get around the Chinese bureaucracy in tax payment and labor recruitment by keeping a small operation. The mode of "guerilla capitalism" theorized by Smart and Smart (1991) is confirmed.

To support the production capacity, companies (as seen in the cases of H.K. Legend and the U.S. DC-DC converter manufacturer) resort to an extensive use of subcontracting. Similar to what has been characterized as "capacity subcontracting" (Vennin & de Banville 1975), "concurrent subcontracting" (Scott 1983) or "cyclical subcontracting" (Watanabe 1971), the H.K.-based contractor and the Chinese subcontractor engage in similar work and are mutually competitive by nature (see Figure 12).

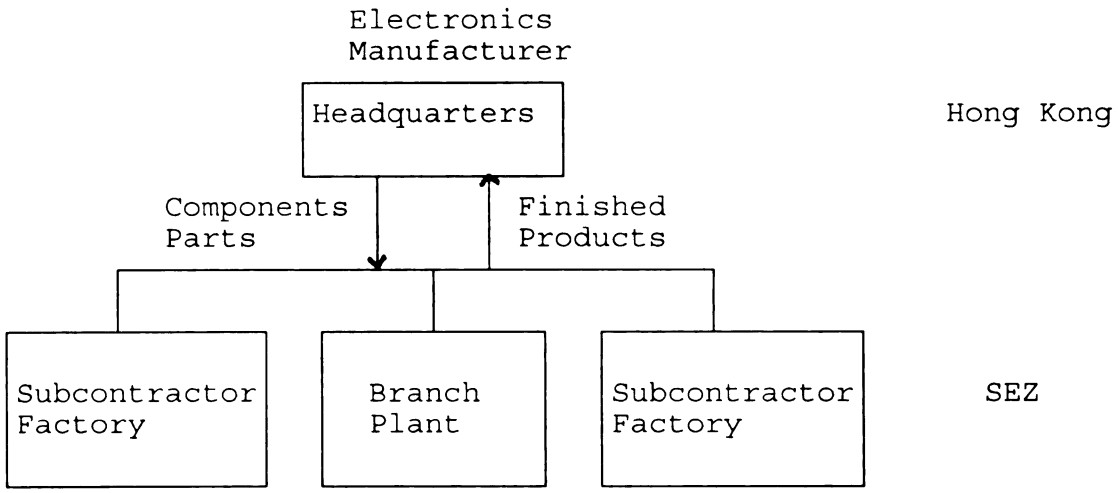


Figure 12: Capacity Subcontracting

However, the subcontracting differs from these characterizations in that the company integrates its subcontractor into its production organizations, rather than simply "farming out the overflow work" as a result of an excess of orders or seasonal orders. The contractor maintains a supervisory role over the subcontractor, and supplies components, training and production equipment to the subcontractor. The contractor intends to keep a stable and long-term relationship with the subcontractor who in turn relies on the orders of the contractor.

7.1.2. Specialization subcontracting

The logic chip manufacturer reveals a pattern of specialization subcontracting. In this case, the contractor subcontracts the fabrication process to the subcontractor, and its own production facility does not perform this process.

The contractor and the subcontractor engage in different but complementary production. Specialization subcontracting represents a vertical disintegration of production while the capacity subcontracting represents a horizontal disintegration of production (see Figure 13).

According to the NIDOL theorists, global corporations subcontract the labor-intensive processes to low-wage countries and concentrate on the capital-intensive processes in their home countries. Contrary to the NIDOL theory, the contractor in this case does not hold capital-intensive production facilities in H.K. She subcontracts the capital-intensive process to China's technologically well-equipped companies in large industrial cities of Shanghai and Guangzhou, etc., and carries out the labor-intensive final assembly in its subsidiary in the SEZ. To reduce the risk of production breakdown of subcontractors, the company maintains a joint venture with a state-run company over which it can maintain management control.

In this case, the contractor does not have technological superiority over the subcontractor and is not expected to offer technical assistance to the latter. But it functions as a raw materials and component supplier. By taking advantage of the production capacity of China, the company can maintain a small assembly unit and register it as a small operation.

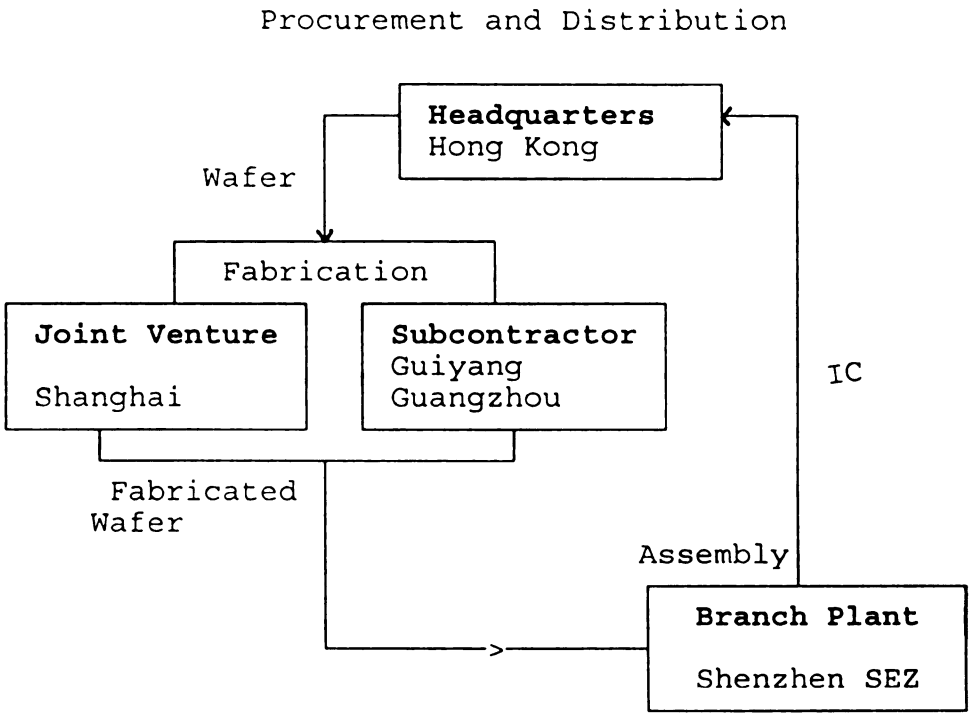


Figure 13: Specialization Subcontracting

7.1.3. From subcontracting to establishing branch plants

In the early 1980s, companies operating in H.K. supplied materials to SEZ factories for processing or assembling. The Shenzhen subcontractors transported the semi-finished products to the H.K. manufacturers and earned a processing fee. The final assembly, testing and packaging of the finished products were carried out in H.K.

After a few years' testing of China's open door policy, most companies shifted all the production processes including assembly, testing and packaging to the SEZ factories while some retained a small workforce in H.K. to do pilot run and

packaging. Companies set up their subsidiaries in the SEZ or bought up the SEZ factories. The branch plant maintains a management capacity for recruitment, worker management, handling customs procedures, training and technical support. But these functions are vertically integrated by the H.K. headquarters in which the control of production and management is centralized (Figure 14).

As the end users relocated their production to the SEZ, the component suppliers also moved north across the border to ensure timely delivery. Electronics manufacturers can simply place orders at the suppliers' H.K. offices, and their branch plants in the SEZ can get the delivery directly from the branch plants of the suppliers in the same locality (see Figure 14). The products for export are transported from the branch plants directly to the container ports in H.K. without going through the H.K. headquarters. The size of the storage facilities in H.K. can be reduced because mainly imported components and raw materials are stored.

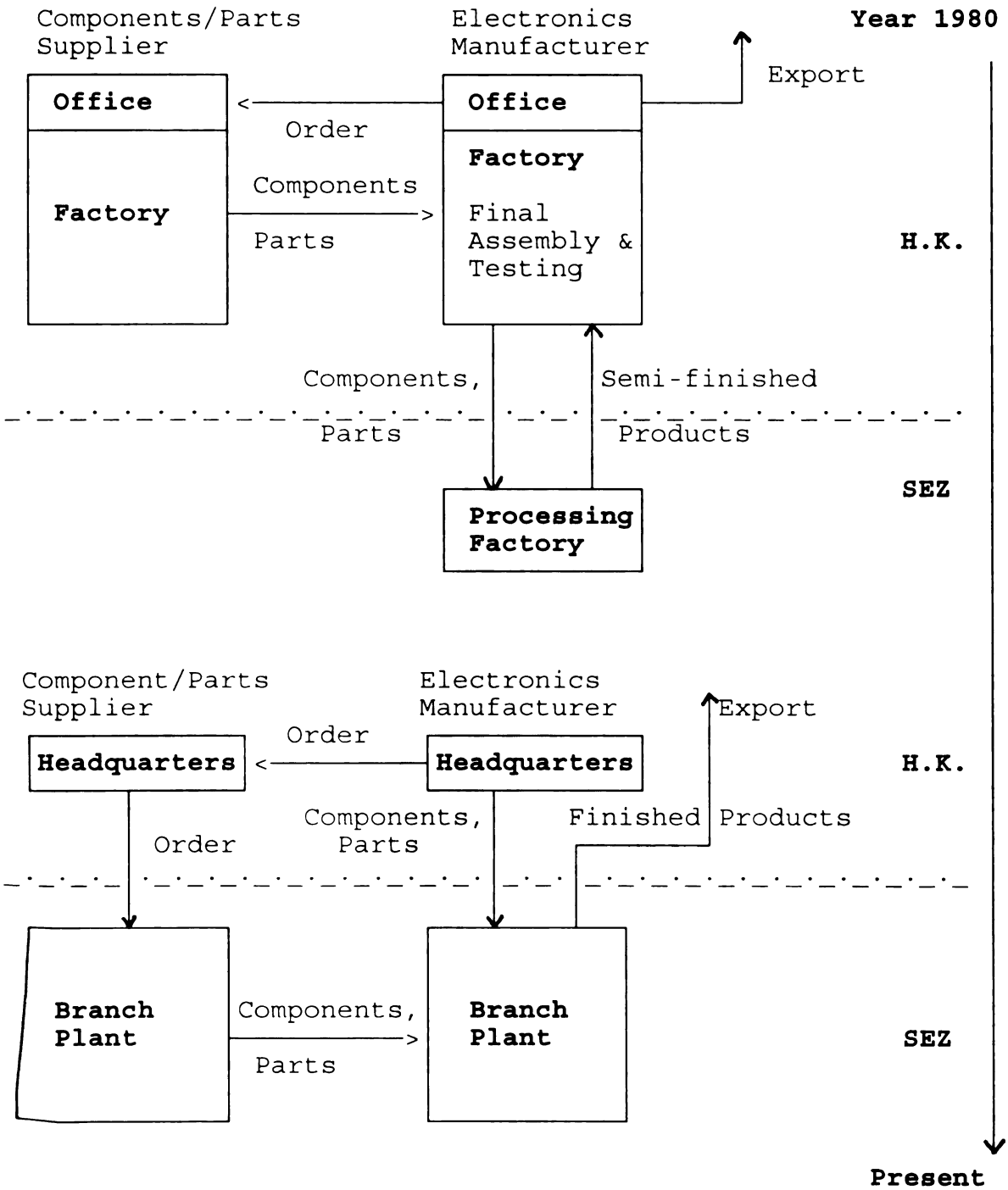


Figure 12: Changing Intra-firm & Inter-firm Division of Labor

7.2. THE IMPACTS ON H.K.

7.2.1. Being a manager of production

A production system based on a network of branch plants and subcontractors requires effective coordination and control. The function of strategic planning centralized in the H.K. headquarters is getting more important. The H.K. headquarters performs strategic planning, design and product development, finance management, marketing and branch plant management. Some large companies keep small production facilities for pilot run and testing. A manufacturer needs a head office to house sales and marketing, sourcing, and design, along with storage and possibly showroom facilities.

Industrial premises catering for mainly production are getting vacant since manufacturing operations have moved away. Companies are moving away from the congested environment of traditional manufacturing areas such as Kwai Chung and Kwun Tong to newer industrial areas such as Siu Lek Yuen near Shatin, Kowloon Bay and Quarry Bay (see also H.K. Industrialist 11/13).

7.2.2. Becoming an Asian regional service center

Despite a reduction of production activities, an increasing number of global corporations are expanding their sales, after sales service and regional coordination function in H.K. The city is seen as a valuable center not only for its growth potential, but as a centrifugal point for technical support activities in the Asia-Pacific region. The location of H.K. is close to many major customers in the region.

Moreover, it allows companies to have a close watch over the Chinese domestic market.

Out of the 57 subsidiaries of global electronics corporations listed in the Directory of Hong Kong Electronics Industry (HKEA 1994), 26 have regional headquarters or offices, and 28 carry out sales in the territory. Only 13 maintain production in H.K. (see Appendix II).

7.2.3. Failing in Developing into a Technological Core

No doubt have H.K. manufacturers undertaken product diversification and deployed technology of higher sophistication[2]. This is reflected in a marked move from the assembly of simple transistor radios to the production of a wide range of consumer electronics, computer products and electronics components in recent years. But H.K.'s technological upgrading has lagged behind that of its competitors. H.K.'s technological level in the semiconductor industry was reported in 1978 to be behind Japan's only 5 to 7 years, and South Korea's and Taiwan's were behind H.K.'s (Ming Pao, 2-29-1978). As reported in 1980, "Taiwan's wages are cheaper; but that's all. Hong Kong has a much better quality and sophistication" (H.K. Standard, 11-7-1974). But H.K. has lost in its race with South Korea and Taiwan in technological development. As early as 1981, international experts warned that H.K. was already lagging seriously behind other ANICs in technological upgrading in the electronics industry and called for a backing of the semiconductor industry (H.K. Standard, 6-1-1981).

Despite its early entry into the electronics production among its NIC peers, Hong Kong currently depends on Taiwan and South Korea for the supply of critical components and parts (Ho, 1992). As revealed in the case studies, critical components such as integrated circuits are imported from Japan and to a lesser extent from South Korea or Taiwan.

Henderson (1989) conceives that H.K. is becoming a technological core of the Asian regional division of labor and possibly also of the Chinese domestic division of labor in the semiconductor industry (and electronics industry as a whole). Henderson's conception is theoretically-based; he rejects a polarized core-periphery paradigm and conceives the possibility of a NIC to become a regional core. But his conception does not apply to the development of the semiconductor industry of H.K.

A growing number of companies are setting up final testing and design in Taiwan or the Singapore--Malaysia region, which have an increasing capacity of wafer fabrication and design and development. H.K. does not have an adequate supply of engineers of relevant knowledge. Moreover, the costs of engineering labor in H.K. are higher than those of Southeast Asian countries. The potential supply of Chinese engineers has not increased H.K.'s capability in attracting design and higher value-added production processes. The Chinese engineers lack exposure to the international technological development and market. Global corporations are inclined to employ engineers from Singapore, Malaysia and the

Philippines, who are generally more fluent in English and more exposed to international business culture.

Semiconductor manufacturers withdrew their production or shifted to sales and regional coordination function in H.K. without investing in design and final testing functions. The local production complex has not made significant technological upgrading and remains producing low-end chips. Their technology does not meet the requirement of global corporations based in H.K. and has not been able to develop production linkages. Motorola subcontracts, instead, to South Korean manufacturers.

H.K. companies are becoming quality-conscious and eager to get international recognition as witnessed in the application for ISO9000 qualification. However, most manufacturers see their competitive advantages lie in cost reduction, product differentiation and responsiveness. Product differentiation takes place at the level of product feature, using standardized technology to remodel the products. The engineers are employed not to develop new products but to support OEM--layout, designing casing of clients' ideas or schematic diagrams, cosmetics and features of new products. Product design and development is largely a copying of the existing standard design with minor modifications in functions, features and outlook. Although an increase of 20% to 30% in profit arises immediately with the relocation of production to China, companies channelize little to strengthen the design and development capacity. Hong Kong

manufacturers look for short-term benefit and quick pay-back. Subsidiaries of global corporations have the R&D concentrated in the headquarters of their companies in the First World, and the profits made are not used in H.K. for technological upgrading.

Most H.K. companies do not develop their own brand names and remain overwhelmingly dependent on OEM relationships to market their products. H.K. manufacturers generally welcome OEM business since they need not invest in overseas marketing. Even capital-rich listed companies do not develop OBN products. This is validated by the fact that 92% of the local electronics companies are wholly or partially dependent on OEM contractors to market their product. Only 8% of the local companies market solely under their OBN.

A lack of brand name development reflects a lack of proper design and development infrastructure as well as marketing capabilities. It is a "chicken and egg" problem. As long as local manufacturers can rely on OEM business, they are not willing to strengthen the design and development, and marketing capabilities. Till they develop these capabilities, they cannot develop their OBN business.

H.K. does not have world-class manufacturing companies as a result of the low-tech nature of production and the dominance of small-medium companies. The existing world-class companies which extend their operations to all over China and other Asian countries are non-manufacturing based: Cheng Kong (real estate), Hitchison (satellite TV, ports and mobile phone

systems), Hopewell (regional builder of infrastructure). In a Far East Economic Review 1995 survey[3] of top local companies in each Asian country, not one electronics or manufacturing company is among the top-10 of H.K. (The top-10 include conglomerates on banking, communication, transportation, public utility, service and real estates.) In Taiwan, computer company Acer is ranked as number 3 and Taiwan Semiconductor as number 10 (and the other top-10 mostly are manufacturing concerns in plastics, chemicals, textile and cement, etc.) In South Korea, Samsung Electronics is ranked as number 2 and Goldstar as number 5 (and many other top-10 are manufacturing companies in auto, iron and steel industries, etc.). In Singapore, Creative technology is ranked as number 6 12/29-1/5, 1995).

H.K. possesses important features to develop design processes and to hold capital-intensive production. They are: (I) advanced telecommunication[4] and transportation infrastructure, (II) free press and flow of information, and (III) low tax and free port, and (IV) minimum government intervention. Although H.K. has an inadequate supply of engineering labor for semiconductor production and a weak linkage industry, Motorola can overcome these disadvantages by reaching out to neighboring countries to procure parts and components, and to recruit engineers and subcontractors. H.K. Legend can organize an international R&D team of software and hardware engineers in H.K., Shenzhen and San Jose (California, U.S.) with the availability of an efficient telecommunication

infrastructure in H.K. However, without strong government support and long term strategic planning, manufacturers hesitated to transit to higher value-added production and to invest in technological upgrading. The reality contradicts to the claims of the policy-makers (such as the Industrial and Commercial Secretary, Department Chief of the Industry Department) that H.K. has already undertaken high value-added production and the government has devoted a great effort on technological development (Economics Dao Pao, 1-3-1994).

7.2.4. Experiencing a Change in the Employment Structure

The industrial wage of H.K. is the second highest in Asia, just after Japan. It has increased from around US$38 in 1970s to more than US$500/month (four to 7 times higher than the wage rate in the SEZ; see HK Yearbook 1994) with associated welfare benefits[5]. However, the real wage increase in 1993 over 1992 was only 1.9 per cent over the previous year. (The salary for the supervisory and technical employees is mostly over US$1,250; and the annual increase of the real wage is higher). Apparently, some manufacturers are employing Chinese immigrants for assembly work in H.K. The electronics industry has a tendency to use more full-time workers than garments, textiles or plastics; cost-cutting through giving out piecework and outwork is less likely. Manufacturers engaging in labor-intensive production have largely relocated their manufacturing facilities to Shenzhen and Southern Guangdong.

The massive relocation of production processes has led to a structural change in the employment structure of H.K. The global corporations' withdrawal of production from H.K. has also led to a significant reduction of employment. The impacts of restructuring are not uniform on various branches of the industry; the workforce reduction is larger in branches in which the production is more labor-intensive. As shown in the case studies, the radio, TV and communication equipment manufacturers have dismissed all the workers and closed the factories in H.K. while the IC manufacturers retain a workforce for major production processes. In 1993, the employment of the part and component branch fell from 25,702 in 1991 to 21,792 in 1993 at an annual average rate of 7.9%. The radio, television and communication equipment branch fell from 10,129 to 5654 in 1993 at an average annual rate of 24.75% (HK Yearbook 1994).

The number of establishments of the industry reached a peak of 2009 in 1989 and decreased steadily to 1446 in 1992 (HKGIDb, 1993; see Table 7). The number of employees reached a peak of 109,677 in 1989 and dropped at an average rate of 13.5% to 53,591 in 1993 (HKGIDb, 1993). Electronics factories in the mid-1960s to mid-1970s were large, employing on average more than 100 persons. The relocation to China and increased automation have led to a significant drop in the industry's average factory size. In 1992 the average number of workers per establishment was 42 persons (HKGIDb, 1994).

Nevertheless, this was still much larger than that of the average manufacturing establishment which was 14 in 1992.

Table 7: Firms & Employees in Electronics Industry in H.K.

Data / Year	# of Firms % of Manu-facturing Industries	# of Persons % of Manu-facturing Workforce	Average # of Persons/Company Electronics Industry	 All Manufacturing Industries
1965	35 (0.4)	5,013 (1.5)	143	39
1975	490 (1.6)	53,833 (7.9)	110	22
1985	1,304 (2.7)	86,115 (10.1)	66	18
1988	1,939 (3.8)	109,677 (13)	57	17
1989	2,009 (4)	99,455 (12.4)	50	16
1992	1,446 (3.4)	60,653 (10.6)	42	14
1993	N/A	53,591 (11)	N/A	N/A

Source: Employment Statistics, H.K. Labor Department

7.3. THE IMPACTS OF ELECTRONICS INVESTMENTS ON SHENZHEN SEZ

The impacts of foreign investments on the SEZ may not be easily generalized with the co-existence of companies of different capital origins and resources, forms of investment and subcontracting, and various products requiring different technological sophistication and labor intensity. The following provides some tentative conclusion from the case studies.

7.3.1. Technological Transfer

Equipment transfer is limited in the operations of small-medium H.K. companies. Manufacturers frankly admit that they have brought simple tools rather than machinery to the SEZ. These tools were imported mainly from Japan, Taiwan or purchased in H.K. in early to mid-1980s and used in the H.K. operations. The level of automation is very low. The production of color TV involves automated assembly line and equipment of greater precision, and the company is planning to sell the whole production line to the Chinese contractor. Not all companies stay with obsolete technology. The surface mount technology is deployed by the electronic toy manufacturer who supplies OEM products to a Japanese customer. In order to outbid their competitors, manufacturers are aware of the need to invest in new equipment. The possibility of technological upgrading of labor-intensive industries does exist.

Global corporations may not necessarily employ more sophisticated equipment since they relocate mainly the labor-intensive production to the SEZ. The U.S. electronic component company deploys mainly simple tools for assembly. The manufacturing of computer mother-boards at Shenzhen Legend is labor-intensive and the only sophisticated machinery used is the surface mounted technology.

Sanyo's operations were also highly labor-intensive in the early 1980s. The installation of the relatively advanced technology in Huaqiang Sanyo (and the other recently built

subsidiaries of Sony) has been a move to exchange technology with market. Sanyo is permitted to sell 100% of its VTR production to the Chinese market, 50% of the color TVs and 25% of tape-recorder production. Sanyo has built 7 subsidiaries in Shenzhen and plans to keep their operation if social and political stability are maintained. The joint venture contract of Huaqiang Sanyo lasts for 15 years. Many global corporations sell their "mature" production lines to their partners at the end of their contracts and moved on to higher value-added production. It is believable that Sanyo is eager to see if the production skill is properly mastered and applied by its partner. Technology transfer is likely to be comparatively effective and intense.

The central and local governments are dissatisfied with the low capital-intensity of the production. Shenzhen has not had an industrial base with adequate supplies of skilled labor and components (discussed later). The government has encouraged the inflow of migrant labor to fill the workforce. With the supply of cheap, unskilled labor on the one hand, and an inadequate infrastructure on the other hand, Shenzhen can attract only labor-intensive production. The technological deployment of "san ci" does not seem to differ from that of the processing and assembly investment. One manufacturer revealed in a telephone conversation that he had removed the robotics in his processing workshop in Dongguan (north of Shenzhen) because of the low skill level of the workforce. (Japanese automobile manufacturers complain about the

insistence of the Chinese authorities on the use of robotics even if less costly methods can accomplish the task)(Sender, 1995).

China's ability to attract the import of advanced technology has been restricted by COCOM. The production of ICs, computers and computer peripherals may need to import some technologies classified as relating to military electronics, which are forbidden to be exported to China, a "Communist" country. This obstacle was removed with the lifting of the ban in mid-1994 (HKTDC, 1994).

The equipment transfer is further hampered by the Chinese side itself (see also Watanabe, 1993). It is observed that the Chinese do not observe the intellectual property rights[6]. The Chinese perceive the obligation of confidentiality of the transferred technology differently. Copyright violation is so serious in China that global semiconductor corporations find it undesirable to set up design centers in China.

Whether the technology transferred to the SEZ is appropriate is hard to conclude. Most manufacturers produce for export and do not need to adjust their product design to the local consumer taste, and are not demanded to increase the local content of their products. They therefore do not need to adjust their production technology and methods.

The range of skill transfer is confined to production, to the exclusion of marketing. The activities of marketing, and design and development are mostly centralized in the H.K. headquarters. With advanced communication and transportation

infrastructure, H.K. is an ideal place for contractors and subcontractors, suppliers and buyers to meet.

Most of the manufacturers find that the Chinese technical personnel have sound academic knowledge but are not adequately exposed to the latest development of international market requirements. H.K. Legend demonstrates that the design and development capacity can be shifted to the SEZ to take advantage of the relatively low-cost technical and engineering labor. But this is not yet common among the manufacturers in H.K. H.K. Legend is a special case since one of the shareholders is a Chinese corporation with sound technological foundation as a partner. The company aims to integrate the management style of H.K. and the technological foundation of China, and the management have no psychological distance toward the brain reserve of China. Instead, manufacturers tend to apply for the import of Chinese engineers to join the design and development teams in H.K.

The local engineers are employed mainly for technical support that is quite limited in scope. Manufacturers are not keen on transferring skills as the turnover of engineers is high. Skill transfer is built in the organization structure of Huaqiang-Sanyo. Sanyo obtains orders, supplies the production technology, supervises the manufacturing, and arranges exports. In return, the Chinese partner is responsible for worker management and domestic sales. The positions of departmental chiefs are allocated to the Chinese

and those of deputy chiefs to the Japanese in order to maintain the continuity of management.

Skill transfer takes place in a stable subcontracting relationship. H.K. Legend rents out equipment to the subcontractors and sends personnel to inspect the subcontractors' production to ensure the quality of products. However, all manufacturers choose local Chinese companies to be their subcontractors. The U.S. company has so far subcontracted only to H.K. companies operating in Shenzhen. The local manufacturers tend to be at a disadvantage when they come into competition with their H.K. counterparts who have more sophisticated tools and exposure to the global subcontracting system.

7.3.2. Employment Structure

The labor-intensive nature of the investment has created a high demand for low-wage workers. Shenzhen has been a small border town before 1980 and has had a sparse local population. The high economic growth as well as the increasing production investment and trade have led to an expansion of the service sector. Local young women prefer to work in hotels, restaurants and shopping centers instead of factories. Foreign investors have to employ migrant workers from other localities in Guangdong Province or even outside the Province[7].

According to Guangdong's policy concerning the hiring of migrant workers, workers from within the province have priority over those from other provinces, and workers from

mountainous areas have priority over those from urban areas. To support the poor mountainous areas in the province, the provincial government encourages companies to give hiring preference to workers from these areas. 90% of the manual workers of the Shenzhen municipality are migrant workers, and 60% of them are 15 to 24 years old. 73% of the migrant workers are females (H.K. Economic Journal, 1/1994). The employment of workers from outside Guangdong has to be reported and approved by the Labor Bureau of the Province[8]. In practice, the local governments normally approve of the labor already employed by foreign investors and reported to the Labor Bureau only afterwards.

The Chinese law and regulation on employment is not strictly observed. Foreign investors are required to pay for a contracted worker a percentage (15-23%) of the wage into a labor insurance fund which offers retirement benefits for workers; 1% of the wage as unemployment insurance, 4% to 8% as health insurance, 0.8% to 2.5% as injury insurance[9]. To avoid these expenses, companies prefer to use temporary labor filled by migrant workers. Manufacturers defend themselves by arguing that the contracts will not be observed by the workers; many workers simply quit the job when they return to their home villages for Chinese New Year vacation.

The "temporary urbanization" as a result of the inflow of migrant workers has added burden to the inadequate infrastructure. To cope with the inflow of migrant labor, the authorities demand the manufacturers to pay for the costs of

social infrastructure. Companies usually offer canteen facilities and dormitories with 2 square meters of space for each migrant worker. They have to pay a management fee per month (about US$1), a social infrastructure charge per year (about US$40). There are other charges and outlays related to labor such as fees for "keeping sanitation" and "growing trees", but the sum is still lower than that of Southeast Asian countries. The fees are frequently imposed within prior notice. Manufacturers find it impossible to do forward planning. They try to keep low wage rates and get around the law and regulations. This is also one of the reasons for companies to keep small-scale production--so as to cover up illegal practices. A smaller workforce is easier to manage and workers can hardly organize massive collective actions against the management.

To support the production capacity, manufacturers encourage their workers to work overtime to earn wages paid in H.K. dollar, and/or subcontract a part of the production to smaller companies. Some subcontractors are overwhelmingly dependent on the orders of a single contractor. To guard against market fluctuations, they usually employ a workforce smaller than required and make them work overtime during busy seasons. When the size of an order is reduced, the company does not need to lay off its workers since the workers can simply work regular hours. All manufacturers other than Huaqiang Sanyo and Shenzhen Legend (5 & 1/2 days) work on a 6

to 7-day/week schedule. Workers are asked to work overtime for two to four hours per day[10].

The relationship between workers and the H.K. management is likely to be far from harmonious. While some find workers rather obedient, many find them poorly educated, greedy and unproductive. The migrant worker status, low pay, and a lack of prospect and access to social amenities are believed to be the reasons for workers to perceive the employers as exploiters. Sanyo's workers protested against the inappropriateness of Japanese style management[11] (Andors, 1988; Leung, 1988). Whether animosity between the H.K. management and mainland Chinese workers exists deserves further research efforts.

The problem of factory fire[12], inhuman living condition, low wage and physical abuse in small-medium H.K. and Taiwanese companies in Shenzhen and the Pearl River Delta areas have caught the attention of foreign media (including H.K. media) (Goldstein and Huus, 1994; Clifton, 1994). The subjection to fire accidents is lower in electronics factories than the factories of plastics, toys, textiles and shoe-making since the materials in electronics factories are mostly inflammable. The working environment is less polluted in terms of air and noise (The Nineties, 4/1994). The workplaces of all four companies I visited are relatively spacious and clean. However, workers' safety can be endangered when the management lock the fire escape in order to prevent workers from stealing electronics products out of the factory.

Moreover, the popular way of building the "three-in-one" facility (factory, storage and dormitory) is life-threatening in case of fire in either unit.

The jobs generated by the foreign investments help feed the population and alleviate the burden of inland. However, skill formation is hardly possible in the context of high labor turnover. Foreign production investments contribute indirectly to job generation for the locals. The visit of H.K. management to Shenzhen has fostered the businesses in restaurants and hotels, entertainment, retails and transportation. Moreover, companies employ migrant workers whose presence in the SEZ creates the demand for retail service and transportation.

7.3.3. Industrial Linkages

The relocation of production to the SEZ requires a reshuffling of supply networks. This has generated some business opportunities for local linkage industries. The ventures which are given access to the Chinese domestic market are required to increase the local contents of their products. The subcontracting system of Huaqiang Sanyo, in particular, contributes more to the development of linkage industry. It carefully inspects the technological level of suppliers before it places its order, and maintains a long-term relationship afterwards. It also rents out equipment when necessary and imposes a strict demand on quality. A technical exchange between the contractor and the subcontractor is maintained.

However, many H.K. suppliers of parts and components, electronics and non-electronics, have also relocated their production to Shenzhen[13]. Most manufacturers can therefore get quick delivery directly from the Shenzhen factories of H.K. or Taiwanese suppliers and do not need to rely on the Chinese suppliers. Chinese component suppliers face a strong competition from their H.K. and Taiwanese counterparts who have more sophisticated production equipment.

The case studies show that the "san ci" ventures are mostly not integrated with the local economy as the processing and assembly operations. The forward and backward linkages of most companies are minimal: manufacturers procure the inputs from H.K. (or Taiwanese) suppliers in Shenzhen and transport their products back to H.K. to export. The reasons for an insignificant purchase of Chinese components and parts are: (I) a lack of variety and choices, (II) low quality despite a cheaper price, (III) late delivery, and (IV) poor service. The basic industries such as metals, chemicals and machinery for electronics production are not developed, and many materials are either not available domestically or of low quality (low precision).

7.3.4. H.K. Companies versus Global Corporations

The south-south cooperation advocates hypothesize that the NIC-TNCs tend to use more appropriate production technology and local components, and are more sympathetic to the local systems based on similar historical experience. But

this hypothesis is not empirically supported in the case of the H.K. capital in the SEZ.

Because of the geographical proximity and cultural familiarity, even small H.K. companies can afford moving north across the border to manage an operation. The small-medium H.K. companies constantly need to struggle with limited resources, and most aim at quick pay-back. The overseas market on which they depend is highly fluctuating. Small orders, seasonality of orders, and sudden rush of orders are common. The contractor-subcontractor relationship is often temporary. Manufacturers have great difficulties in long-term production planning. They sustain their competition by cost reduction. In the investment environment of the SEZ where laws and rules are not clearly established and are interpreted arbitrarily, the H.K. managers often look for loopholes in the law and regulation.

> It takes a shrewd operator to make money in China and H.K. businessmen are among the shrewdest. They're adept at spotting opportunities, building personal connections and finding their way around the mainland's maze-like bureaucracy (Rosario, 1995: 20).

The H.K. way of doing business and management can be believed to be widespread. Global corporations set up a base in H.K. to train a team of local employees and then establish manufacturing plants in China. The H.K. employees serve to ease their language difficulties in China (Wide Angle Press, 6/1990). The U.S. DC-DC converter producer sends 10 managers to its four factories in Shenzhen and the managing director of

the H.K. headquarters is a H.K. Chinese. H.K. Legend is set up to integrate H.K. style of management with Chinese technology.

In recent years, some smaller Japanese and U.S. companies have joined hands with large H.K. companies to establish joint ventures in China. These companies do not have the same kind of political clout to get advantageous terms from the Chinese authorities as the global corporations. The H.K. companies offer vital shortcuts around the often-laborious process of establishing relationships in China[14] (Goldstein, 1988).

The global manufacturers who relocate their production from H.K. to the SEZ seek to reduce the factor costs, much like the H.K. manufacturers. They used to produce "mature" products in H.K. and the production technology for which is rather standardized. The relocation to Shenzhen largely means a transfer of the standardized production technology. Nevertheless, their parent companies possess a strong financial capability, a significant share of the world market and stable sources of material and component supplies. These companies can afford a more systematic production organization, management and training, and spacious production lay-out. Some tend to maintain a more stable relationship with subcontractors. Japanese corporations demanding higher yield and lower defeat rate from subcontractors, tend to provide technical assistance to subcontractors. However, global corporations are not uniform in their corporate behavior. The U.S. DC-DC converter producer aims at cost

reduction; it employs migrant workers more than the quota allowed and pays wages at a rate even lower than that of many H.K. manufacturers.

7.4. H.K. AND SHENZHEN: RELATIONSHIP AND PATHWAYS

7.4.1. The Economic and Socio-cultural Linkages

Shenzhen has taken away a significant part of the production and manufacturing employment from H.K. However, Shenzhen has been vertically integrated by H.K. in electronics production, under a capital and structural control of H.K. entrepreneurs. The local state companies produce primarily simple household products and consumer electronics with simple functions. Their markets are restricted to the protected domestic market and those of Eastern European countries, former Soviet Union and Middle-East countries. Chinese companies have to rely on their H.K. counterparts to get foreign contracts. The freedom to travel is limited in China and the management and engineers lack exposure to the international market and trading experience. Owing to the tight credit policy since late 1988, the local companies have had difficulties in obtaining loans from banks or subsidies from the government. Many companies lack foreign exchange to import materials and components. In addition, many existing companies are believed to be "brief-case" companies[15] (Sklair, 1991).

The specific statistics of the electronics industry are not available. In the whole industrial sector, foreign direct investment represents 48% of the SEZ's industrial

establishments and 76% of the total industrial value and export value in 1993. H.K.'s foreign direct investment represents 70% of the total foreign direct investment of the whole municipality. In a list of top 100 manufacturing companies in Shenzhen in 1992 (in terms of economic efficiency), 82 companies are "san ci". In the top 20, 16 are "san ci". The state companies are criticized as being technologically backward and inefficient in management and marketing (Shenzhen Statistics Yearbook, 1993).

Other than influencing the industrial structure of the SEZ, H.K. has been the number one buyer of the city's export commodities. Today, much of Shenzhen's external financing need is arranged or advised through H.K. Shenzhen views H.K. as a good place to raise short-term loans, medium-term notes and certificate of deposit, and to obtain advice on the arrangement of long-term finance. H.K. is also a bridge for Shenzhen to get access to the Japanese or the European market. Moreover, H.K. provides qualitative benefits to Shenzhen as a source of learning about the world financial markets and methods and as a model of reform for Shenzhen's financial system. One of the most important economic linkages between H.K. and Shenzhen is the millions of foreign exchange earnings Shenzhen benefits each year from H.K. tourists.

The economic and social influence of H.K. on Shenzhen is tremendous. Deng has defined the SEZ as the "Socialist Hong Kong". The H.K. dollar rather than renminbi is the currency of choice of Shenzhen (and throughout the 61 million people in

Guangdong). Shenzhen taxi drivers accept fares in H.K. dollars at a uniform market rate which excludes any necessity for bargaining. Factory workers are willing to work overtime to earn wages paid in H.K. dollars. In early 1993, a study by the H.K. and Shanghai bank estimated that 30% of H.K.'s currency now circulates in Guangdong (and most of it is in Shenzhen). China's central bank has officially approved the circulation of the Hong Kong dollar in Shenzhen (and Zhuhai) SEZs. Hong Kong currency should become the main currency in Shenzhen and Zhuhai since the SEZs require a different monetary system than that used in inland cities, according to the spokesperson of the central bank (AWSJ, 1-7-1994).

The legacy of H.K. is found in the booming service sector. Shops and restaurants use the word "Hong Kong" in their names, even though their stocks may be procured from Taiwan, Japan and other parts of the mainland. Life resembles to that of H.K. of 15 to 20 years ago. People wear H.K. fashions, listen to H.K. radio, and watch H.K. television programs via satellite dishes that are installed by local military units; members of the military technical units profiteered from installing and maintaining these illegal dishes (Overholt, 1993). Even migrant residents, workers and taxi drivers learn to speak some Cantonese, the Chinese dialect spoken by H.K. people. Pagers are getting nearly as popular in Shenzhen as in H.K. The mobile phone has become a status symbol for local businessmen and cadre. The entertainment business is modelled after that of H.K. The

most popular "Karaoka bar" attracts the locals and the H.K. managers who stay in Shenzhen to supervise their operations. A growing number of H.K. male managers are setting up "second households" in Shenzhen.

The H.K. professionals have tremendous indirect influence on how business is done among the Shenzhen officials. The Shenzhen authorities have headed for the development of the service sector with the advice and information from H.K. professionals. The authorities are publishing more data on property and stock trading and experimenting with regulatory mechanisms. The official publication of the Shenzhen stock exchange uses the complex style of Chinese characters familiar in H.K. (and Taiwan), rather than the simplified characters used in the mainland. A growing number of officials from Shenzhen and Guangzhou visit H.K. to participate in management training courses. It is reported that Chinese officials are interested in how the colonial authorities seek control over the local property market, the stock exchange and the housing and building sectors (Cheng and Mosher, 1992).

7.4.2. H.K.--Shenzhen/PRD Regional Division of Labor

Shenzhen faces no competition from Southeast Asian cities to attract H.K. investments. No manufacturer has planned to diversify risks by investing in Southeast Asian cities because of the language problem and unfamiliarity to the countries. The MFN status granted by the U.S. gives China a big advantage over Southeast Asian countries. However, Shenzhen (and Guangdong Province) is facing competition from the cities of

the Philippines, Thailand and Malaysia in attracting investments of global corporations. The capital cities of the Philippines and Malaysia have more abundant supplies of technical and engineering personnel and a higher English literacy than Shenzhen. A few global semiconductor manufacturers moved their production away from H.K. to Southeast Asian cities but not to China. Moreover, the U.S. DC-DC converter manufacturer in this study, while maintaining four subsidiaries and four subcontractors in Shenzhen, set up a plant in the Philippines as a back-up after the Tienanmen Event 1989.

Shenzhen is facing development bottlenecks. The costs of land, labor, and infrastructure are increasing. The problem of electricity shortage is still serious; Shenzhen has only constructed three small power stations with a total capacity of only 209,000 kilowatts. The flow of traffic has exceeded the capacity of the roads and severe road congestion is very common. The laxity in the enforcement of traffic regulations and a poor management of road construction aggravated the situation. The red-tape existing in customs check-points is very serious. Four strikes have been organized by the truck drivers transporting goods between H.K. and the Pearl River Delta areas against the bribe-seeking and other money grabbing acts of the Chinese customs officers (China-Hong Kong Economic Monthly, 1-5-1993)[15].

As other localities offer equal or even more privileges to foreign investors, manufacturers are considering to

relocate their production northwards to the Pearl River Delta areas. Dongguan, Huizhou and Ping Wu are so far the most popular sites for relocation. Shenzhen is predicted to be deindustrialized, as labor-intensive processes will be moved north and capital-intensive processes will be invested in large industrial cities such as Guangzhou, Shanghai and Tianjin. For the past 15 years, the booming foreign production and trade have fostered the growth of business in restaurants and hotels, retails, and import and export. Shenzhen is expected to become a commercial city where buyers and sellers conduct conferences and trade. It is generally believed that Shenzhen cannot challenge H.K.'s position as an international service and financial center in 15 to 20 years' time. The information and telecommunication service, banking and transportation in H.K. will remain superior to those of Shenzhen in 15 to 20 years' time.

H.K. is increasingly integrated into the regional division of labor in Guangdong. The regional division of labor is structured in a way that Shenzhen and the Delta cities have become similar but separate entities dominated by the H.K. capital, and compete against each other for foreign direct investment and export opportunities (Chan, 1991a). The growth in industrial processing in the Delta cities was even faster than that of Shenzhen since the mid-1980s. Shenzhen's industrial subcontracting with H.K. companies has been primarily export-oriented, using imported inputs and making direct arrangement with foreign manufacturers. Its growth has

not lead to horizontal cooperation and linkage with the Delta's industrial establishments. On the other hand, the Delta has had to employ labor from other parts of China to meet the growing demand for cheap labor. The massive influx of inland labor has reduced the ability of the Delta to supply both labor and agricultural products to Shenzhen (Chan, 1991a). Therefore, both Shenzhen and the Delta are linked directly to H.K. with little complementarity to each other. H.K.'s role in the economic development of both is predominant. The overwhelming majority of foreign direct investment is originated from H.K. or through H.K. The industrial structure is predominantly shaped by H.K. investments. H.K.'s share of the total export of Guangdong has accounted for more than 80% since the late 1980s, and H.K. manufacturers employ more than 3 million workers in Guangdong.

It is likely that H.K. will increasingly export adaptation design to Shenzhen and Delta cities to cope with the increasing technical labor costs in H.K. H.K. Legend's expansion of both manufacturing and design capability in Huizhou demonstrates the importance of integration of design and manufacturing to quicken the exchange between research engineers and plant engineers, and to shorten the development time and the time to market. If the experiment succeeds and more manufacturers follow the way, H.K. will also depend on Guangdong Province for skilled labor.

Some capital-rich H.K. and global corporations perceive that the capital-intensive production will be maintained in

H.K. The city is perceived to have the potential to attract high-tech development and should do so. But manufacturers of small-medium companies express that H.K. will be deindustrialized and the pursuit of high-tech will remain a slogan rather than a practice; high-tech development in Shenzhen and H.K. is unlikely. In 10 to 15 years' time, China's demand for low-end products will continue to be strong. The people inland are still very poor and the demand for high-end products is very low. The inability of China to absorb high-tech products will hinder the transition of these economies to high-tech production. The development of high-tech capability may only generate foreign exchange by manufacturing for exports.

H.K. will become mainly a global city priced itself in its information and telecommunication infrastructure, and banking service provision. H.K. will continue to attract global corporations since it is still an ideal place to observe China. Global corporations need H.K. personnel to deal with the Chinese authorities because many Chinese officials still lack exposure to the international commercial culture, and the rule of the law and the concept of contract are not well established. H.K. will continue to attract the global corporations to establish regional headquarters and offices. The shift of global corporations from manufacturing to trading in H.K. has been inevitable.

Manufacturers comment that the industrial policy of H.K. has been inadequate. The industrial policy has failed to

respond to the technological changes of the electronics industry. The H.K. government's non-interference policy has meant the survival only of the fittest. The H.K. government should have learned from the Taiwanese and Singaporean governments to invest in technological upgrading. Some manufacturers even criticize the government of practicing "false democracy" by turning a blind eye to the manipulation of listed companies. The manufacturers do not expect any change in the industrial policy of the H.K. government with its limited time to govern the territory. Nevertheless, H.K. government's non-intervention policy does receive appraisal from most of the global corporations.

While global corporations reserve a cautious optimism about H.K.'s future under the Chinese rule, H.K. manufacturers are generally not worried about it. To the former, China is still a "communist" country, and whether the political stability in the forthcoming "post-Deng" era will be maintained remains a big question. To the latter, the Chinese regime will be pragmatic over H.K. The present economic and social system of H.K. will be maintained unless H.K. is turned into a "subversive" base against the ruling regime of China.

To conclude, H.K. is "hallowed-out" in the manufacturing sector with the intensifying industrial relocation. The profit generated by industrial relocation is not significantly channelized to technological upgrading. The claim by many top government officials that HK has advanced to high tech

production is simply not true. H.K. maintains a low technological level and has a limited presence of high tech manufacturing. It has become a managerial core performing headquarter functions but not a technological core of southern Chinese division of labor.

It is known that the SEZ has experienced high economic growth. But the technological absorption is far from satisfactory. Both equipment and skill transfer are limited. While some global corporations maintain a more stable subcontracting relationship, extend technical assistance to subcontractors, and provide systematic training to workers, the majority does not contribute significantly in this aspect. The violation of labor laws and regulations is serious in the context of extensive use of labor from inland. The industrial linkages generated by foreign investment are limited.

Facing the reduction in subsidy from the Peking government and the increasing competition from the PRD areas for industrial processing, the Shenzhen government has shifted to focus on service sectoral development and has limited labor-intensive foreign investment. The city is being made to be "another Hong Kong".

8. THE POLITICAL ECONOMY OF INDUSTRIAL RESTRUCTURING AND REGIONAL DIVISION OF LABOR

The recent economic development direction of Shenzhen appears to follow the footstep of H.K. from an industrial economy to a service economy. On the surface, both cities have been going through similar stages. H.K.'s economic development has been characterized by entrepot trade (pre-WWII to 1940s), industrialization (1950s to 1970s), and service economy (1980s to present). Shenzhen has undergone stages from "entrepot" (1980-1984), to industrialization (1985-present), and it is presently aiming at building a service economy. While H.K. has taken 50 years to go through these stages, Shenzhen seems to have compressed the stages of development into less than two decades. The development of both cities has been driven by very different political-economic forces and circumstantial factors. Whether the H.K. model can and should be repeated is questionable.

8.1. H.K.'S ECONOMIC RESTRUCTURING

8.1.1 H.K.'s industrialization

The takeover of the industrial sector of the entrepot trade has been celebrated as a positive development of the H.K. economy. The economy was no longer overwhelmingly dependent on a single sector which had been conditioned by world trade and China's relationship with the West. The

vulnerability of the H.K. economy was witnessed in the loss of its entrepot trade with China as a result of the U.S.-China hostility during the Korean War in the early 1950s.

The early industrial development of H.K. has benefitted from the economic recovery of the Western countries in the post-war era. Its subsequent stage of industrial diversification and technological upgrading has been constrained by the nature of the colonial state and class formation. The transition from an industrial economy to a service economy without an advanced industrial base has made the city vulnerable to the fluctuations of the Chinese economy and the world market.

The state has practiced the "positive non-interventionist" policy; it has not provided an adequate financial support and long-term direction to the industrial sector. This is related to the financial conservatism institutionalized in the colonial state, and a political alliance between the dominant financial/commercial capital and the state elites before the industrialization (Chiu, 1992)[1]. The government has confined its responsibility only to provide infrastructure and a legal framework for private business transactions, and to maintain social order (including the reproduction of labor) (Henderson, 1989).

The H.K. economy since its inception as a British colony was dominated by trading, ship-building and repairing companies, communication and transportation, property, and

financial services. Most of the present world-class trading companies that dominated the early post-war H.K. economy, were set up in the 19th century. The formation of Hong Kong Bank (then H.K. and Shanghai Banking Corporations), the largest commercial bank in H.K. (functioning similar to a central bank which does not exist in H.K.), was attributable to this group of British merchants.

The state control over the financial system in Taiwan and South Korea through nationalizing the banks, previously owned by the Japanese, empowered the state to direct the industrial development. In H.K., however, the established private control over the financial system[2] before industrialization posed a severe constraint on the state's financial capacity (Chiu, 1992). The money supply and the interest rate were administrated by a committee of bankers headed by the note-issuing banks. The government could not determine the price (interest rate) and quantity of money supply, and lacked the tools of selective credit control to influence industrial development.

The state's lack of control over the financial system made it difficult for the government to borrow from domestic sources. In both Taiwan and South Korea, the states borrowed heavily from the domestic banking system to finance their economic intervention. Even the Singaporean state had access to the central provident fund which offered some support to state development projects. In the case of H.K., the bankers would be willing to buy government bonds only if the state

relaxed its regulations on reserve requirements and reclassified government debts as liquid assets (Owen, 1971). But the government perceived this policy as too risky to adopt (Hong Kong Hansard, 1966).

H.K. as a British colony, was expected to be financially self-sufficient by the sovereign nation. Failing to do so would mean a dependence on British government loans and grants, and this dependence would entail the supervision of colonial finance by the Treasury[3] (Miners, 1987). Although H.K. was geographically attached to Communist China and a target of China's reunification, it was not subject to any immediate military takeover. Therefore, it had never benefitted from the economic aid of the U.S. (Chiu, 1992). Similar to the case of Singapore, H.K.'s economic growth performance made it unlikely to obtain multilateral loans.

The major way to generate income for the state, other than tax, was through land sales since the state was the sole owner of most of the land of the colony. The state's vested interest in land sales, together with British capital's interest in trading, finance service, real estate and commerce had affected the distribution of power among different economic sectors in H.K. (Ng, 1992). These interests dominated the Executive Council (Exco, advisory for the Governor) and Legislative Council (Legco, supreme law-making authority) in both the pre-war and post-war era. In the 1960s when H.K. embarked on industrialization, both councils were

dominated by directors of corporations dealing with trading, banking, public utilities and real estate (Miners, 1987).

Before the industrialization in the 1960s, most of the existing manufacturing companies were small. Among the new generation industrialists who profited from the post-war boom in export manufacturing, only the refugee capital from Shanghai established large production plants, employing more than a thousand workers. However, the refugee capital was indifferent to the politics of the colony. The industrialists did not have an institutionalized access to the power center. The first unofficial member of the Legco coming from the manufacturing sector was not appointed till 1964, and that of the Exco had to wait till 1972 (Chiu, 1992).

H.K., similar to Britain, had "a separation of finance and industry"; the institutional linkage between the financial system and the manufacturing sector was weak (Ingham, 1974). The industrialization was rather independent of the financial system. The capital for industrial investments came from personal savings of entrepreneurs or from their families. The local banks which performed the traditional commercial bank functions adopted the golden rule of "borrow short, lend short". The banks extended loans to foreign and domestic trade rather than to the manufacturing sector since trading loans were usually self-liquidating and profitable (Jao, 1974). Industrial loans were arranged on a short-term basis. Banks in Taiwan and South Korea channelized large amounts of funds to the industrial sector. However, in H.K., less than

20% of the bank loans and advances were extended to manufacturing industries during the manufacturing boom in the 1960s and 1970s (Jao, 1974). The meager share of H.K. manufacturing in bank loans is not commensurate with its contributions to the gross domestic product (Liu and Chiu, 1994).

The limited access to the power center reduced the chance for the industrialists to obtain assistance for industrial development. The industrialists' calls for subsidization of industrial land use in the 1950s and 1960s were severely attacked by the financial-trading interests in the Legco; they were worried that the government would increase tax to subsidize industrial development. The financial capital's interest was to maintain free trade, a free port, low profit tax, and small government (Jao, 1974). The state did develop new towns and reclaim land for industrial use. But it sold the land through public auction at the current market price. Public auction ensured that land price would be bidden up to the highest level that the industrialists could afford[4] (Wu, 1992). This method certainly benefitted large companies but not the small-medium ones which constituted the majority in the manufacturing sector. The high land price policy and the real estate boom exerted a negative effect on industrial development. The industrialists were interested in investing in real estates rather than in research and development[5].

The calls for the establishment of an industrial bank to provide long-term capital loans to manufacturers were strongly

attacked by the bankers who strived to avoid a competition from a public or semi-public financial institution (Matthews, 1960). They were worried that any loss from the industrial bank would be translated to higher taxes. The state was unwilling to commit on such a support to industries because of its limited financial capability. The marginal position of the industrialists did not generate enough political interest among the state elite to assist in industrial development. The large number of small capital and their political apathy made it difficult to organize collective actions to pressurize the state.

The adequacy of the "positive non-interventionist policy" was questioned in the late 1970s since the industry's share of the GDP started to fall. H.K.'s industry concentrated on sectors vulnerable to protectionism. H.K. lagged behind the other ANICs in technological upgrading. The government was urged to reexamine its role in the economy.

A non-profit corporation was established in 1977 to develop industrial estates, and grant leases at substantial discounts to qualified industrial companies. In the same year, the government set up an advisory commission for industrial diversification. The commission conducted an investigation on H.K.'s industry. The report advocated government support for several industries strategic to Hong Kong's technological development, including electronics, light engineering and precision machinery. But it opposed explicit sectoral intervention (Sit, 1988). The report called for an

improvement of consultative machinery and supportive measures, and the establishment of the Industrial Development Board (IDB) to plan and monitor H.K.'s industry. Such a department is run by the industry-oriented ministries in South Korea and Taiwan. But the IDB was headed by the financial secretary whose responsibility was to oversee government expenditures (Haggard, 1990).

The H.K. government has adopted some piecemeal measures to support high-tech industrial development. It has increased its financial support for human resource training through the establishment of the new University of Science and Technology in 1991. It has also planned to establish a new H.K. Technology Center to provide research and development facilities for small high-tech companies. Meanwhile, increased funding has been provided to the H.K. Productivity Council to help local electronics manufacturers to improve their production efficiency. The H.K. Trade Development Council established the Electronics Library for the benefit of H.K. manufacturers and exporters in mid-1988 (HKTDC, 1990). The Council has implemented industry-specific programs. These include a surface-mount technology laboratory, where miniaturizing techniques for implanting semiconductors on printed circuit boards are being developed. The government has offered subsidized industrial-use land and facilities to companies using technology- and capital-intensive techniques. For example, the most recently developed portion of the Tai Po Industrial Estate has been reserved for high-tech companies.

The government has remained unwilling to provide massive funds to build information and high tech electronics industries. Compared to other ANICs, H.K. has spent little on R&D. Taiwan's investment on R&D in 1990 was 1.2% of its GDP, Singapore invested 0.9 percent and Hong Kong invested only 0.04% (SCMP, 5-9-1991).

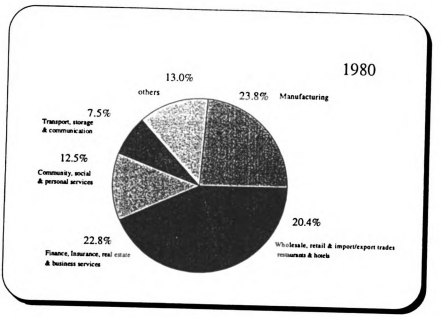
Though manufacturers have not received much direct assistance from the state, they have benefitted from the state's regulation of the labor market and the costs of transportation, housing, health care and education. The government has provided extensive education at secondary and tertiary levels. It provides the second-largest public housing system (just behind Singapore), which presently accomodates 45% of the total population, and over 80% of the working class (Ho, 1992; Schiffer, 1992). Labor legislation has operated to discourage labor mobilization, though not as repressive as that of South Korea, Taiwan, Singapore, the Philippines and Indonesia (Deyo, 1997; Henderson, 1989).

Private companies have been given free hand in undertaking massive relocation. They are not required by the state to bear much "social responsibility", nor are they limited by a strong labor movement in making decisions on restructuring. H.K.'s unions are small, accounting for less than 10% of the workers in the manufacturing sector. Moreover, the unions are fragmented into three "federations" of different political orientations (the Federations of Trade Unions, affiliated to the Chinese Communist Party; the Trade

Congress, affiliated to the Nationalist Party; and the independent unions). The unions have very limited power to mobilize collective actions.

The labor and land resources in southern Guangdong, and the demand for products and services from a booming Chinese economy have helped H.K. avoid the adverse effects of the world recession. Hence, the H.K. government could further delay giving assistance to the manufacturing sector. The manufacturers did not feel the pressure to undertake technological upgrading.

Massive deindustrialization has taken place since the late 1980s. The manufacturing sector remained the largest single contributor to the total GDP till 1987. It was edged into the second place by the wholesale, retail and import/export trades, restaurants and hotels sector in 1987, and into the third place by financing, insurance, real estate and business service sector in 1989. Its contribution to the GDP fell from 23.8% in 1980 to 13% of the GDP in 1993 (see Figure 15).



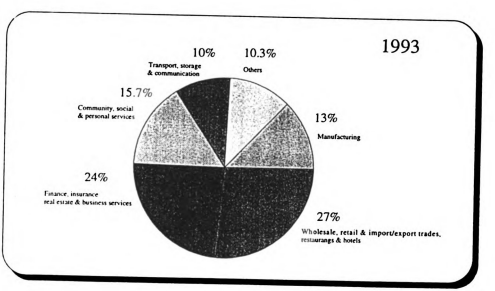


Figure 15: Sectoral Contribution to GDP in H.K. in 1980 & 1993

Source: Hong Kong Yearbook 1994

The relocation of manufacturing industries has caused unemployment among the manufacturing workers. Manufacturing was the largest sector in terms of the contribution to employment till 1990. It accounted for 47% of the total employment in 1980, and declined to 21.1% in 1993, while the employment of the wholesales, retail and import-export trades, restaurants and hotels sector, and the financing, insurance, real estate and business services increased drastically over the same period (see Figure 16).

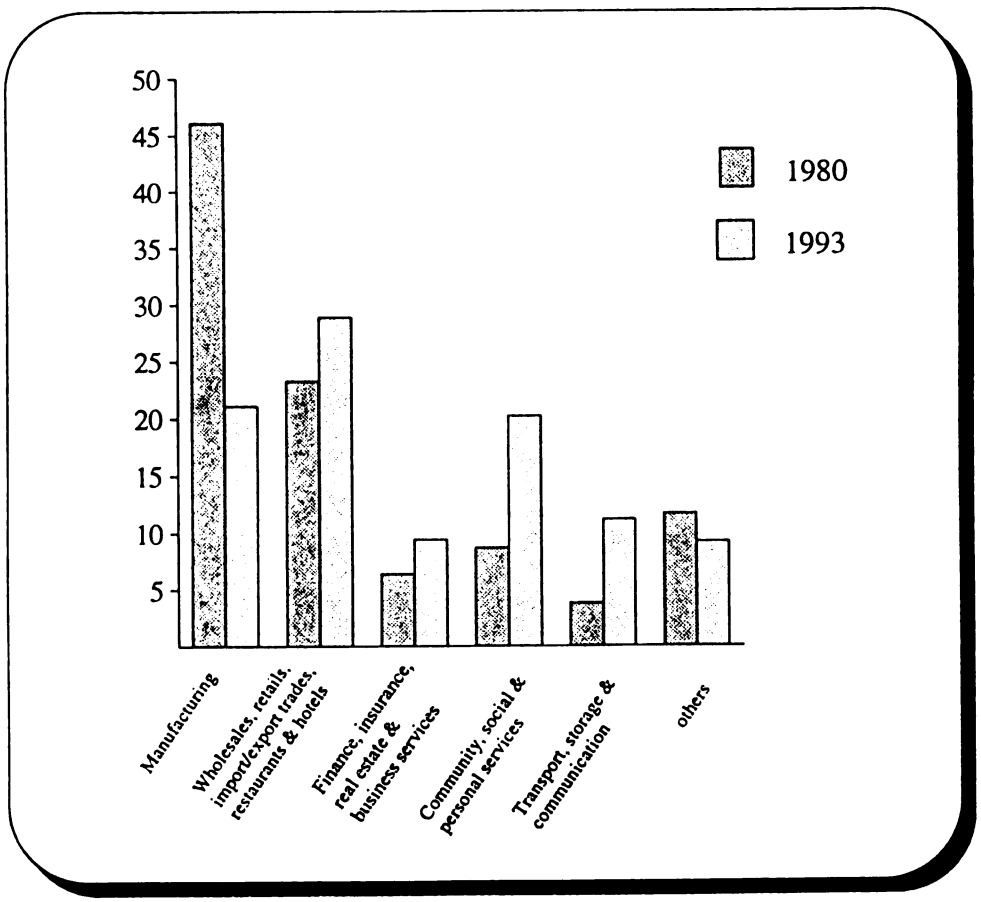


Figure 16: Sectoral Contribution to Employment in H.K. in 1980/1993

Sources: Hong Kong Yearbook 1994

The number of establishments in the manufacturing sector increased consistently between 1975 and 1988, from 31,034 to 50,606, representing an average annual increase of 3.8%. Thereafter the number of establishments fell to 39,238 in 1993. The number of workers reached a peak of 892,140 in 1980, and the number employed fell in the early 1980s, before recovering in the mid-1980s. Since 1987, employment has again started to drop at an average rate of 8.6%, reaching 508,133 in 1993 (see Figure 17).

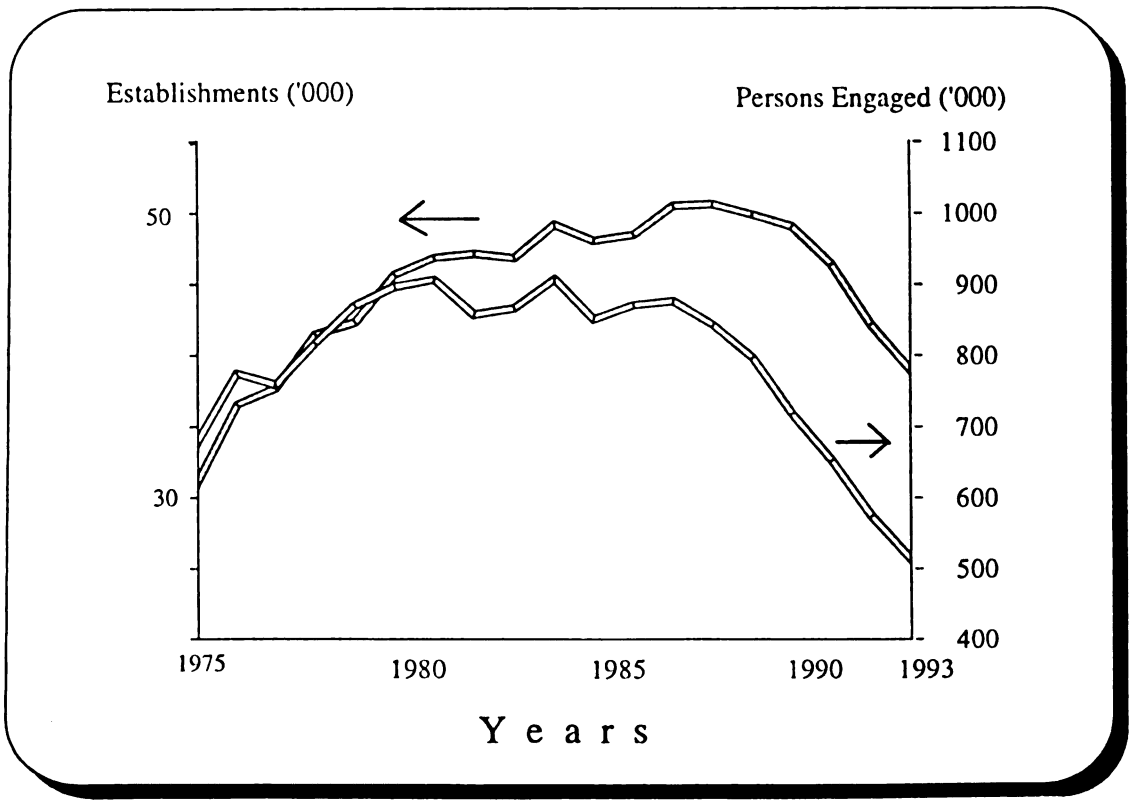


Figure 17: Establishments/Persons in Manufacturing Sector in H.K., 1975-93

Source: Hong Kong Industries 1993. Hong Kong Government Industry Department

The government has invested HK$300 million in 1992 on retraining of 15,000 workers for the next two to three years. By the end of 1993, 4,000 unemployed workers have participated. However, the retrained workers may not get a job after the retraining (Economics Dao Pao, 1-3-1994). Workers over 40 years old find it hard to get jobs in hotels owing to the age and the lack of English fluency. Some retraining courses require participants to have Grade-9 education which many middle-aged workers have not attained (Ming Pao, 7-13-1994). Many end up taking part-time or full-time jobs in fast food restaurants, supermarkets, construction and transportation companies.

Presently, with a buoyant economy, unemployment and underemployment remain low at 2% and 1.3% respectively of the labor force. However, a sole dependence on the service economy, and a neglect of industrial development and upgrading is short-sighted. It is difficult to support the livelihood of several hundred thousand workers and their families (two to three million people; according to Ng Ka Wai, Chancellor of H.K. Science and Technology University, Ming Pao, 3-3-1994).

8.1.2. The Takeover of the Service Sector

The service sector has expanded for three reasons. First, the H.K. financial center has absorbed a lot of capital flow since it plays the middleman role for the investors who are interested in investing in the Chinese economy. Both foreign companies and Chinese economic organizations see H.K. as the most convenient place to meet. The Chinese capital has

also sought listing in the H.K. stock exchange. Secondly, service industries have boomed to facilitate the import and export trade of China with and through H.K. Thirdly, the H.K. manufacturers have largely moved their production to China and turned the remaining operation in H.K. into one for strategic planning, financial management, product design and development, marketing and business negotiation. This has led to a proliferation of professional services. The profit made in southern China by the H.K. capital is also diverted back to H.K. Few investors have channelized the profit to technological upgrading. Much of the capital has been invested in the service sector (including the property market) for quick profit. This further strains supplies and raised prices, causing higher inflation rates (Chan 1991b).

The overexpansion of the service sector has been unexpected. No human resource planning has been made to cope with the growth of the labor demand. Furthermore, the lack of confidence in the post-1997 era has led to the emigration of professionals. The shortage of professional and managerial personnel has pushed up wages and prices of services.

Finally, the government has yielded to the pressure of the business communities to allow the recruitment of foreign workers at the supervisory, technician, and craftsman levels in 1989. The scheme was extended in 1990 to include experienced operatives. In 1992, the scheme was expanded to allow a total number of foreign workers not exceeding 25,000 at any one time. The unions are united in their opposition as

the government allows the employment of foreign workers not only for the expanding service sector but also the declining manufacturing sector[7]. In August 1994, the retails, restaurants and catering, and import-export sector has received the largest quota of foreign workers, representing more than 40% of the total recruitment. The government has also expanded the quota to sanitation, cleaning and ironing service, community service and wholesales. The employment of foreign labor is likely to increase the difficulty of local manufacturing workers to search for service jobs.

The cost of providing accommodation is more than offsetting lower wages paid to staff brought in from China. Some companies prefer to export low-end service to China rather than bringing Chinese workers in. Cathay Pacific Airways moves some of its data processing to Shenzhen, and so does Citicorp. The H.K. and Shanghai Banking Corporation will do the same once it can ensure that information cannot be intercepted (FEER Yearbook 1994). Both industrial and service sectors continue to rely on the Chinese economy and labor, and H.K. is further integrated into the Guangdong economy.

8.1.3. The Problems of the Present Economic Direction

H.K. has priced its development on its finance, banking and transportation infrastructure. Other major Asian cities (Tokyo, Singapore, Bangkok, Taipei, Kuala Lumpur and Jakarta) are trying to compete with H.K. as a financial center in Asia. Certainly, one can easily point out the disadvantages of the other cities[8]. Nevertheless, cities are trying to create

comparative advantages in one way or another in order to get a share.

H.K. has been the region's supreme load center. Large container carriers and consortia were attracted by the demand from the territory's domestic industries, and the chances for transhipping U.S. West Coast cargoes to East Asian and Southeast Asian feeder ports (Rimmer, 1992). However, H.K.'s position as the dominant transhipment port for the region has been challenged by Singapore and potentially by Kaohsiung (Taiwan) (Ng, 1992; Rimmer, 1992). Singapore has taken over H.K.'s place as the number one container port in the world in terms of throughput.

China's improvement in the relations with Taiwan (and South Korea) may result in the introduction of direct shipping services, thus reducing H.K.'s importance as an entrepot. Some international shipping companies have already started to invest in terminal facilities in Taiwan (Ng, 1992). Taiwan is working to take over H.K.'s role of a regional hub; it expects that H.K. will face uncertainties associated with its return to China. The Taiwanese government has realized that it can hardly become a regional hub if it bans direct trade and travel links with China, an important player in the region. The Kuomintang of Taiwan has proposed to set up an offshore shipping center at the southern part of Kaohsiung for ships sailing from foreign ports headed for China[9] (Ching, 1995). Taiwan has strengthened its domestic infrastructure base, launching a US$302 billion six-year development plan in 1990

(Baum, 1995). Unlike Singapore, Taiwan can serve the same parts of Asia as H.K. Once it establishes direct cross-straits trade and transport links with China, it may become an alternative center for transhipment.

The expansion of port capacity of the Pearl River Delta region and Shanghai also poses a challenge to H.K.'s supremacy in port capacity. In Shenzhen, four ports have been developed. Three are on the Pearl River Estuary--Shekou, Chiwan and Mawan (financed by Singaporean capital), and Yantian (partially sponsored by Japanese loans). Yantian poses the largest threat to H.K. because it has deep water asset. Their full impact on H.K. is not yet realized owing to China's bureaucratic delays and customs procedures. But once Shanghai's port modernization is completed and the subway is fully operated, H.K.'s role as a gateway to China will come under new pressure. Some H.K.-based trading companies have already planned to bypass the territory some day (FEER Yearbook 1994).

H.K.'s airport was ranked as the sixth business airport in the world in 1990, and the second busiest East Asian airport after the Tokyo International Airport at Narita. It is the world's fourth largest airport for air cargo. However, the new development of other major airports in the region will also take away some business from H.K. Advanced facilities are seen in the second terminal and planned third terminal being developed at Singapore's airport, the expansion of Bangkok's airport, the addition of a second passenger terminal

in Jakarta's airport, the expansion of the New Tokyo Airport at Narita, the new Kansai Airport in Osaka (Japan) and the airport in Seoul (South Korea) (Rimmer, 1992).

H.K. will certainly play an important role as an agent for Western companies but not for its regional neighbors. The opening up of China to Taiwan, South Korea and other Southeast Asian countries will lead to a partial by-pass of H.K.'s middleman function (HK21, 5/1993). Taiwanese have already made massive investments in some Guangdong cities and Fujian. Korean companies operating in H.K. are reported to consider to supply the Chinese market directly (H.K. 21, 5/1993).

How long can the H.K. manufacturing prosper on the cheap labor and land supply of southern Guangdong? The rise of the costs of land, living and labor in southern Guangdong will continue to drive H.K. manufacturers to move northwards. At certain points, H.K. managers cannot commute back to H.K. in a day or two, and the coordination and transportation costs will increase. While Guangdong has been closely tied to H.K. and tends to accept the H.K. way of doing business, the inland may not. The mode of "guerilla capitalism" represented by H.K.-managed investments is likely to induce a backlash among the Chinese authorities, and "Hong Kong bashing" is likely to happen. Certainly, Hong Kong Chinese are Chinese in origin. The animosity towards "Hong Kong Chinese" may not manifest in the same way as the animosity towards affluent Chinese in Malaysia and Indonesia. Nevertheless, when H.K. becomes a part of China, H.K. industrialists will appear less as foreign

investors but more as national entrepreneurs; the polarization is then between classes and regions within a country.

There exists a possibility for China to suffer from labor unrest and a breakdown of law and social order accumulated by economic and regional inequity. China's economic reform has resulted in a bigger rich-poor gap and changed the party's image from "big brother" to "big thief" (Wehrfritz, 1995: 36). Corruption has been widespread; many government and military officials and their children reaped illicit profits on trade and real-estate schemes. Inflation has arisen to above 20% and higher than 30% in some coastal cities and SEZs--a rate higher than that in 1989 when the Tiananmen protestors raised inflation and corruption as key grievances. Some 30 million workers are expected to be laid off under the government's plan to close or downsize 100,000 state companies (Kaye, 1995). Facing the weakening central authority, Deng Xiao-ping issued an internal party document, warning about the possibility of political instability, and urged his heirs to maintain the "absolute authority of the center" (Watson et al., 1995: 37).

The recruitment of foreign labor has remained limited but is expected to grow after the reunification with China. The incoming Chinese labor is likely to drive down local wages and strain the supplies of housing and social amenities. The foreign workers are mostly semi-skilled labor or technicians but not managers and professionals since China does not have a supply of experts trained in global marketing and

international law. The combined consequence is likely to be an enlarging economic inequity in the city with the H.K. managerial and professional personnel prospering from the expanding economy, and the local and foreign labor sharing much less of the prosperity and being kept divided. This scenario is similar to that of the global cities such as New York and Los Angeles.

8.2 THE POLITICAL-ECONOMY OF SHENZHEN ECONOMIC DEVELOPMENT

8.2.1. Shenzhen's Early Phase of Development

In the early 1980s, the government invested primarily in infrastructure (transport, land, communication and energy) but not in services (public finance, education and medical) and training of skilled labor. The central government allowed the transfer of skilled labor to work in Shenzhen. It encouraged the interior companies to set up joint ventures with foreign companies in order to attain the transfer of foreign technology and management skills. Interior companies in Shenzhen were given preferential treatment on land use fees and enterprise income taxes. In the SEZ, they could also purchase imported equipment and personal goods. The lack of customs control and the freedom to respond to market conditions on the one hand, and the scarcity of consumer products in the domestic market on the other, enticed interior companies to go for trading instead of production activities. Shenzhen became an entrepot for those prevented from going to H.K. The SEZ's total export volume was dominated by re-export. Domestic exports through the SEZ were allowed to

retain 100 percent of foreign exchange earned. The foreign exchange earned that would otherwise be kept by other provinces was used to finance the purchase of consumer goods in the SEZ for resale to the local market. The negative impacts of these activities are detrimental to the national economy. It pushed up the domestic prices of consumer products, creating further opportunities and incentives for such activities (Wu, 1990).

In the early 1980s, the SEZ had a bias towards property development and tourism. To attract H.K. investments, the SEZ authorities approved the application of relatives of H.K. investors for a transfer of their household registration to Shenzhen (Crane, 1990). H.K. investors invested heavily in house building to move their mainland families to the prosperous SEZ. Furthermore, hotels and holiday resorts were built in the SEZ to provide H.K. citizens recreation space on weekends and for short holidays. When the property market in Hong Kong plunged into a deep recession in 1982, the SEZ economy was severely affected.

By 1983, the central government realized that the industrial investments and technology transfer were limited. Most of the equipment brought in by foreign investors is antiquated and inappropriate, and some equipment sets were incomplete, missing key parts or lacking instruction manuals. According to a study of Chinese economists, foreign investors aimed at cost-saving. They did not participate directly in management, and did not have a close connection with the

operation of the project and "therefore" the equipment was relatively backward. Moreover, the Chinese labor force was not ready to use advanced technologies on any wide scale (Gu, 1984).

Other than failing in introducing advanced technology, Shenzhen failed to balance its export and import, leading to a drain of hard (convertible) currency. Despite a dependence on imported components and raw materials, the EPZs in Taiwan were successful in gaining export sales. In the EPZs of Taiwan, only 2% of the zone's goods were allowed to be sold in the domestic market. However in Shenzhen, 70% of the SEZ's products were sold inside China, and the most aggressive domestic sales were by companies with foreign participation. Throughout the first 5 years, 65% of medium- and large-sized foreign investment projects were composed of commercial and other non-industrial items. The foreign investment on property developments was twice as much as that on industry (Kleinberg, 1991).

The loosening of restrictions and the black market opportunities on the boundary between the state-controlled and free market economies gave rise to smuggling and corruption. The economic inequity between the SEZ and the interior enlarged. Even Deng Xiao-ping raised the possibility that the Shenzhen "experiment" might not succeed in June 1985 (People's Daily, 6-30-1985). Chinese officials, economists and theorists engaged in the debate about the nature of the SEZ--whether it was capitalist or socialist.

The central government replaced the mayor of the SEZ to remind the zone officials of their responsibility to meet the policy objectives. The State Council's SEZ Office was given the responsibility to streamline the local administration and to approve larger foreign investment projects. The SEZ authorities attempted to fight against corruption by giving local officials "special training". According to a Municipal Party report in 1986, "one third of [Shenzhen] city's annual revenue is spent on strengthening the socialist ideological and cultural position..." (translated from Beijing Review, 2-24-1986: 18).

The central government ordered a construction of an 86-kilometer barbed wire and electrical fence between the SEZ and the interior as a physical "control line" as well as checkpoints to watch for smuggled goods. This boundary was to stop the drain of national hard currency and skilled labor into the SEZ. Only workers with a contract could move to Shenzhen, and the inflow of workers would be strictly controlled. Potential incoming workers had to take a test to qualify for entry. From 1985, Chinese visitors to Shenzhen were required to apply for a visa with photographs, complete identification and explanation of purpose. This made it more difficult for ordinary Chinese to visit Shenzhen than it was for H.K. citizens. This was tantamount to a recognition of Shenzhen's economic integration with H.K. (Kleinberg, 1991).

A reduction of central subsidies to the SEZ was more politically palatable for Deng Xiao-ping and his supporters

than an abolishment of a policy with which they were closely identified. The opening of Shenzhen was partially motivated by political nationalism. The reunification with Taiwan and H.K. has been one of China's priorities. Shenzhen was a show case of the "one country, two systems" solution to Taiwan and H.K. The Chinese government was aware that Shenzhen, dominated by H.K. capitalism, would serve to demonstrate China's openness to the partnership with H.K., Taiwan and overseas Chinese.

8.2.2. Shenzhen SEZ's Industrialization

Under the readjustment pressures from the central government since the mid-1980s, the SEZ authorities emphasized industrial development, and the electronics industry became the largest industry. The industrial sector has increased its contribution to the GDP of the SEZ from 18% in 1980 to 29% in 1985, and more than 40% in the 1990s (see Table 8).

Table 8: Sectoral Contribution to GDP in SEZ in Selected Years

Year / Sector (%)	1980	1985	1991	1992	1993
Manufacturing	18	29	46	41	40
Construction	20	18	6	10	15
Real Estate, Finance	N/A	N/A	17	18	19
Restaurants, Hotels and Commerce	N/A	N/A	12	12	11
Transportation and Communication	N/A	N/A	6	5	6

Source: Shenzhen Yearbook 1994

The industrial sector became the largest sectoral employer, increasing from 17.7% in 1982, to 72% in the whole municipality and 58% within the SEZ in 1992 (see Figure 18).

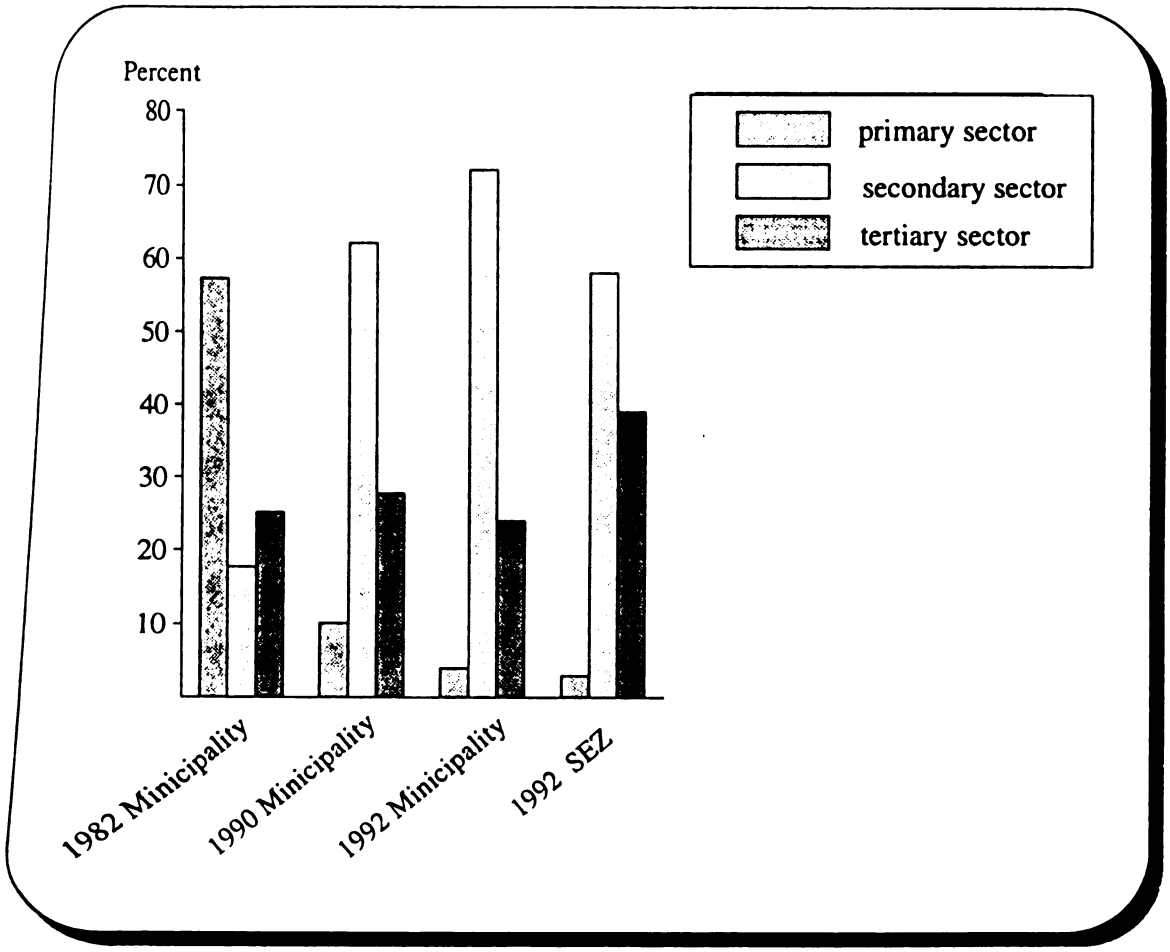


Figure 18: Sectoral Contribution to Employment in Shenzhen in Selected Years

Source: Shenzhen Yearbook 1993

The central government desired technology transfer without providing the appropriate conditions to attract technology givers and the adequate legal framework to guide the joint ventures. The policy-makers did not define the kind of technology and industries they wanted to attract. The flooding of labor-intensive production in Shenzhen did not enhance backward and forward linkages.

From the beginning, the SEZ was set out to be a mismatch of policies. The SEZ was caught in all sorts of dilemma without having enough time and resources to support a multi-divisional development. The reformist Beijing officials and Shenzhen authorities were eager to boost the economic growth of the SEZ and to demonstrate the experiment of "one country, two systems". Long-term goals were sacrificed to short-term results; the SEZ became a haven for H.K. manufacturers, service industrialists, property developers, and Chinese bureaucrats and "red capitalists".

The central government, with an estimated surplus of one-third of the agricultural labor due to improved agricultural efficiency, decided to transfer 100 million labor from agricultural sector to other sections of the national economy by the year 2000 (Douglass, 1989). The central government decided to open 14 coastal cities to foreign investment in 1984, and huge "open zones" extending inland on the Yangzi, Pearl, and Yellow river deltas and in southern Fujian Province in 1985. It also designated Hainan Island as the fifth SEZ. 60 million rural people have fled to cities especially in the

Guangdong Province. Presently, the governments collect at least half of their tax revenue from migrants or the companies they work for (AWSJ, 1-7-1994). The policy of allowing inland surplus labor to look for employment has created an abundant labor supply. Foreign investors have not felt any immediate need for technological upgrading.

The preferential policies of Shenzhen SEZ have been extended to the newly opened areas. The SEZ faced competition especially from the Pearl River Delta areas. County and town governments in the PRD region offered even more privileges to foreign investors. In Shunde, the local authority has offered an exemption of the payment of miscellaneous fees, extension of tax holidays for local tax payments, a priority in the supply of water and electricity, and a charge of fees at state-owned company level. In Dongguan, the government has allowed the companies to escape tax payment by registering under a new company name after the expiration of tax privileges. There were cases that the relatives of the foreign investors got priorities in applying for emigration to H.K. Governments of counties and towns have been eager to attract foreign direct investments and they kept a blind eye to the abuses of law and regulation by foreign investors.

> Guanxi, or political connections and personal relations, cements business deals. Laws are flexible, rules can be overlooked and even the taxman can be kept at bay if the right strings are pulled. Lawyers have little power, and contracts or copyrights are difficult to enforce (Rosario, 1995: 20).

National subsidization continued to diminish since the late 1980s, despite an improved transportation infrastructure that included several new highways built in part with H.K. capital, ports, a new airport, and new rail lines within the SEZ (JETRO, 1/1989; Cheng & Mosher, 1992). Many of Shenzhen's special privileges have been curtailed by the central government. The SEZs lost their right to retain 100% of their hard currency earnings in 1989, and are now required (like other coastal areas) to turn over at least 20% of them to Beijing. This was partially in response to interior provinces' complaints of the SEZ's deprivation of inland's hard currency income by enticing their export operations out to the SEZ. Limits to inter-provincial trade have raised the relative importance of the trade links between Taiwan, H.K. and southern China.

8.2.3. Problems of the Present Economic Development Direction

The 1989 Tiananmen incident accelerated the development of the economic links between Shenzhen (and Guangdong) with H.K. and Taiwan. It led to a reduction of foreign investment and lending. The central government were pressurized to allow regional governments more latitude to pursue economic reforms appropriate to the regions. The SEZ authorities have not openly discarded the mission on developing export-oriented industrialization and absorbing technology transfer; they have announced policies to welcome advanced production processes and to restrict labor-intensive processes. But they have

focused on developing another "Hong Kong"--a service-oriented international city. The service sector is expected to reach a contribution of 65% to the GDP within this decade (Chen & Mosher, 1992).

The prospect of attracting high-tech investments may remain a wishful thinking. There has been a shortage of technicians, managers and professionals. Preferential treatments to personnel from interior China including household registration, housing and free mobility have been promised. But governments of other provinces have been unwilling to let go their expertise and have imposed restrictions on the mobility of their professionals. Shenzhen possesses a base of tertiary graduates only half of that of H.K. and one third of that of South Korea. Even H.K. has experienced difficulties to pursue high-tech development owing to an inadequate supply of engineering labor and government support. Only in recent years has South Korea started to transform its industries, moving towards high-tech development (Liu et al., 1992).

Shenzhen is likely to lose in the competition with Shanghai for high-tech investments. Shanghai has a high concentration of industrial and design skills. The high-profile Pudong economic zone of Shanghai is the first zone that the central government seriously planned and invested in. It has already attracted investments from Japan and U.S. in semiconductor, automobile and industrial machinery.

To establish a service-oriented international city, professionals need to freely interact with the international environment, establish business networks, and directly deal with overseas buyers. Freedom to travel is a precondition, and that is still lacked in China.

The communication infrastructure of Shenzhen is far from satisfactory--only 8 telephone sets/100 people as compared to 54 sets/100 in H.K. The banking and financial infrastructure has just recently been developed. More than 80% of the exports of Shenzhen and 40% of the exports of the whole country still go through H.K. It is likely that its service sector will continue to mirror the economic needs of H.K. when the customs and border control is further loosened in 1997. The opening of the property sector to foreign investors in 1988 quickly mirrored the characteristic volatility of the H.K. market. Before 1988, the land price rose only 20%. Since then, it rose 70% each year. A rush to invest in real estates rather than industries has been witnessed (The Nineties, 7/1993). Inflation has stood as high as 35% in the past two years and the RMB devalued rapidly. Restaurants and hotels offered two prices--one in HK$ and one in RMB. (Customers are charged higher than black market rate when paying in RMB.) The rise of land price will further drive up the living and production costs and this will add burden to industrial development.

Excessive speculation has led to a rise in land costs and the emergence of a visible leisure strata. It consists of

land-owning villagers who profiteer from selling or renting out their lands. They are notorious for hanging around at discos and karaoka bars, and for molesting factory owners and temporary workers. These newly rich, together with government officials, members of the military and police units, entrepreneurs and professionals enjoy luxurious lifestyles.

On the other side, Shenzhen has a temporary workforce, accounting for 72% of the whole municipality and for about 50% of the SEZ. They are restricted to much of the government-funded social amenities. They are not provided medical benefits and many other basic employment benefits. They are not encouraged to marry and to establish families in the SEZ. If they do, they have to pay penalties such as higher school fees for their children. Their only hope is to work long hours and seven days a week, and to return to their home villages with some savings after years (Cheng & Stacy, 1992). The increasing economic inequity has given rise to contradictory social attitudes, which can cause problems if the underprivileged demand a larger share of the economic prosperity of the SEZ.

The negative social and economic impacts of the economic integration--overheated property development, high inflation, and economic and social inequity--are similar to those taking place in the Growth Triangle discussed by Personage (1992). A growing number of ethnic Chinese Singaporean managers are building "second homes" in Johor and Batam. The alienation of

SEZ temporary workers from the inland is similar to that of the migrant workers in Johor and Batam from their mainlands.

8.3. TOWARDS A POSITIVE DEVELOPMENTAL REGIONAL INTEGRATION

The regional economic integration has brought about short-term benefits to both cities with trade-offs for long-term development. H.K. benefits from cheap labor and land supply from Shenzhen and the Pearl River Delta region, but suffers from a further delay in technological upgrading, and its manufacturing workers have to bear the cost of the economic transformation. Shenzhen and the Pearl River Delta areas enjoy high economic growth rates but have not attained significant technology, skill transfer, and linkage effects. The region has remained over-dependent on migrant labor. A one-dimensional orientation towards service sectoral development without technological and industrial upgrading will make both economies vulnerable to world market fluctuations.

8.3.1. Recommendations

H.K. has the preconditions to attract higher value-added design and development processes, as seen in its strong telecommunication, information and media, transportation and banking infrastructure. It has one of the world's most efficient telecommunication systems, with digital fibre-optic networks, cellular and mobile telephone networks, and satellite transmission facilities (Tung, 1993). The city also provides a diverse and free circulation of press, business publications and specialized data bases. The industrialists

can freely procure components from the global markets and obtain technical supports from the engineering personnel in other countries.

Most electronics manufacturers have shown concern about technological upgrading and desired government support. My research finding contradicts to that of Sit's (1988) research on small-medium companies. Sit concludes that the small-medium companies find the government policy acceptable and government support unnecessary.

However, one cannot expect that the H.K. government will create an industrial policy with its limited time left to govern the colony. Any change in policy will depend on the future Special Administration Region government and Chinese government. According to a study by Dataquest for the Hong Kong Government Industry Department (1991), the communication between the senior-most government officials associated with the electronics industry of China and the industrialists of the H.K. electronics industry is very poor. The officials believe that H.K. industrialists are opportunistic and do not invest in basic research or design and development. They do not see the role of H.K. on technology transfer. Nevertheless, the Beijing official would like to see H.K. transit to a higher technological level. They consider H.K. a partner of China rather than a competitor with the impending reunification. They perceive H.K. and China as complementary--China as a product developer and H.K. as a marketer.

Basic research in electronics is not likely to be successful with the small size of the economy and the existing research capability in H.K. Targeting selected technologies is the most feasible option for H.K. The H.K. electronics industry has largely lost in its competition with South Korea and Singapore in the medium-end electronics production for the global markets. It can, instead, target technologies demanded by China.

China does not offer a big market for finished products in consumer electronics since it protects the domestic market for its national entrepreneurs. China needs to upgrade its product and process technology. Many state-run companies have been equipped with relatively advanced technology which remains underutilized. The production of consumer electronics is heavily dependent on imported components; half of the ICs are imported. The production of electronics components can enhance the forward linkages since the products can be supplied to the intermediate goods sectors.

Dataquest (1991) suggests that the H.K. industrialists can facilitate the technology transfer by organizing a three-way joint venture:

(I) The Chinese partner offers land, labor and infrastructure.

(II) The foreign partner provides technology and international markets.

(III) The H.K. partner offers management, product redesign to meet local requirements, and logistical support.

H.K. needs foreign technology, land and skilled labor. Not to say H.K. and China, even Taiwan needs to depend on foreign technology in strengthening its semiconductor industry. The Taiwanese personal computer companies realized that they had to have their own chip supply. Taiwan imported about 80% of the estimated $5.4 billion in chips in 1994. The chip has surpassed crude oil as Taiwan's single biggest import item since the early 1990s. Taiwan has announced to invest more than $3.3 billion in the next three years to build 10 new fabrication facilities (Thornton, 1995). It is not difficult to get a Western-Japanese partner for technological cooperation, but hard to get enough land. The Hsinchu Science Park which houses most of Taiwan's semiconductor industry has been full. One can image that land is an even bigger problem for H.K. industrialists. H.K. has no alternative but to resort to its industrial hinterland in southern Guangdong.

It is difficult for Shenzhen to attract advanced production processes on its own. Most of the global corporations prefer to locate the state-of-the-art projects in China's established industrial centers such as Shanghai, Changchun and Tianjin. Shenzhen is an ideal location to supply land to the 3-way joint ventures mediated by H.K. companies, with its geographical proximity to H.K.

The Chinese officials should not give too many concessions to foreign investors. The offer of too many privileges to foreign investors means a weakening of the competitiveness of local companies, which are facing a tight

credit policy imposed by the central government. The small-medium companies of the ANICs may further delay upgrading their technologies, and this will lead to a severe competition between southern Guangdong and the ANICs for the low-end segments of the global market. The direct competition will lead to price-cutting (already happening in textile and garments). A decreasing profit margin will further delay the technological upgrading.

The Shenzhen government should strengthen law enforcement, fight against corruption, and reform the bureaucracy and work culture. These can help create a more predictable investment environment for investors. It needs to develop industrial training and retraining, and to evaluate its household registration policy to allow more migrant workers to become permanent residents so as to maintain a stable workforce.

8.3.2. The Politics of Integration

H.K. and Shenzhen have to cooperate with each other in order to attain a more balanced economic development. Industrial integration requires supporting policies in territorial, labor, communication and transportation, housing, and environmental protection. While many H.K. senior government officials have recognized the regional integration as unavoidable, the government has made little adjustment to the situation. Few have devoted an effort to keep in touch with their counterparts in Guangzhou (the capital of Guangdong Province).

The inattention to the integration is seen in its Port and Airport Development Strategy (PADS) announced by the governor in October 1989, a mega-project aimed to boost the economy after it suffered from a professional and capital flight due to the Tienanmen Event. The government seemed to be unclear about the economic development direction of H.K. It claimed that H.K. would need PADS whether it would develop into:

(I) a regional center for high-tech manufacturing, financial and other service industries; or

(II) a center for intermediate technology manufacturing and other economic activities in the area extending north, beyond the PRD, to large parts of southern China (Government Secretariat, 1989).

A high-tech manufacturing center requires very different infrastructure locally and regionally from an intermediate technology manufacturing center. The experiences in other ANICs suggest that the direction of an economy is not dictated by market force but shaped by active policy intervention.

The building of ports and airports will certainly shape southern China's transportation system for at least a generation and therefore a coordination with the Chinese government is necessary. One of the Chinese suggestions was to build the airport in Shenzhen at a fraction of the price[11]. Many top executives of both airlines of H.K., and some of the highest H.K. government officials in charge of civil aviation have considered Shenzhen a better location for a new airport[12]

(Overholt, 1993). The British government objected to Chinese control over the air rights, and argued that this would infringe H.K.'s autonomy. The Chinese government then offered to grant H.K. the land, the access and the air rights, but the British rejected the offer.

The Chinese Government, failing in getting the cooperation from the H.K. government, has been pursuing its own port and airport strategy. The airports of Shenzhen and Macau together will be able to handle 20 million passengers by the year 2000, and this is likely to result in a dispersion of Chinese traffic from H.K., leaving the new H.K. airport operating below its capacity. The ports of Shenzhen will also take away some transhipment business from H.K. (Rimmer, 1992).

8.3.3. The China Factor

There are reasons to believe that China will keep its promise to preserve the economic system of H.K. after 1997 from a historical and practical viewpoint. China had the experience of keeping an enclave with an economic system different from that of the mainland in its recent history. China had felt threatened by the activities of Westerners but realized that it had no alternative but to deal with them. Treaty ports along the coastal areas were established in the 19th century where Western law and customs prevailed, and through which China could contain the Western influence within a narrow geographic area (Overholt, 1993).

Pragmatism rather than nationalism of the Chinese leadership has determined China's policy over H.K. after the

Communist takeover since 1949. Despite the prevailing nationalism, the leadership has not attempted to take over H.K.[13] Politically, China needs to demonstrate to Taiwan that "one country, two systems" will be observed in order to facilitate the resumption of sovereignty over Taiwan.

H.K. has fulfilled the function of mirroring the development of capitalism for China. To support its economic reform, China needs H.K. to continue its functions, and understands that H.K. has to maintain a free flow of capital, people and information, and an independent legal system. Two-thirds of Chinese foreign direct investment come from H.K. About 25% of foreign exchange earnings come through H.K. The whole Guangdong's economic prosperity is heavily dependent on H.K. investments, and H.K. manufacturers are employing more than 3 million workers in the Province. H.K. investors are investing in property, infrastructure, hotels and tourist-related facilities in important Chinese cities other than in Guangdong. Deng Xiao-ping has repeatedly stated that the preservation of H.K.'s capitalist system should continue for a hundred years rather than 50 years, and China needs "additional Hong Kongs". From a Chinese perspective, the way to ensure H.K.'s success is to maximize its prosperity by promoting economic integration with China. During the tense periods of the Sino-British negotiations over H.K.'s future from 1981 to 1984, and the conflicts over the airport-building and over H.K.'s democratization reform, China has stabilized H.K.'s economy with its huge investments.

The only reservation of the Chinese government towards maintaining H.K.'s capitalist system is related to its perception of H.K. as potentially subversive against the Chinese ruling regime. Historically, H.K. and its nearby areas have been the base of foreign pressure and domestic revolutionary movements. British used this base to dismantle the Qing dynasty's sovereignty in the 19th century, resulting in the loss of H.K. Sun Yatsen's revolutionary movement based in the region overthrew the dynasty in 1911 (Overholt, 1993). The Chinese government is worried that its great asset, H.K., will become a liability when it is turned into a subversive base with unlimited financing.

9. CONCLUSION

9.1. A SUMMARY OF RESEARCH FINDINGS AND ANALYSES

The regional division of labor between Shenzhen SEZ and H.K. is a product of Chinese government policy and corporate search for lower factor costs. The Chinese government established the SEZs for not only economic but political purposes--to entice H.K., Macau and Taiwan back to the Chinese rule. China will resume sovereignty over H.K. and Macau in 1997 and 1999 respectively under the arrangement of "one country, two systems". China wants to demonstrate to overseas Chinese its tolerance of capitalism in the SEZs.

Unlike an EPZ which was set out to generate local employment and foreign exchange, the Shenzhen SEZ was aimed to attain a transfer of advanced technology and modern management expertise through foreign investors. Shenzhen was designated to perform a matchmaker role between foreign manufacturers and Chinese industrialists. However, the SEZ has been able to attract labor-intensive industries but not capital-intensive production from H.K. The relocation of labor-intensive production processes to the SEZ mirrors a spatial extension of the industrial subcontracting. In the early 1980s, companies subcontracted processing and assembly work to Shenzhen factories and carried out final assembly and testing in H.K.

Over years, companies shifted all the production processes including assembly, testing and packaging to the SEZ factories. They turned their subcontractors' plants into their subsidiaries or set up their own plants in the SEZ.

Subcontracting, nevertheless, prevails. Capital-rich companies owned by H.K. or managed by H.K. managers prefer to set up operations of a scale smaller than one that they can afford. This strategy serves to reduce the risk of a total production breakdown caused by strikes, government intervention and natural disasters. It also increases a company's flexibility to get around the Chinese bureaucracy in tax payment and labor recruitment. To support the production capacity, companies resort to "capacity subcontracting" and "specialization subcontracting".

A production system based on a network of branch plants and subcontractors requires effective coordination and control of various plants. The H.K. headquarters performs strategic planning, design and product development, finance management, marketing and branch plant management. The relocation to the SEZ helps lower the production costs and increase profits. But the profits are not channelized to invest in technological upgrading to a significant extent. H.K. is becoming a manager of production in southern Guangdong, but not a designer or technological core of the region.

The role of manufacturing undertaken by H.K. for decades has been eroded. More than 80% of manufacturers who engage in

labor-intensive industries have relocated their production to China. In the capital-intensive industries, only those running the "state-of-the-art" production facilities maintain their operations in H.K. Most global corporations have shifted to carry out sales, after-sales service and regional coordination in the territory. H.K. has become an Asian regional service center for global manufacturing. The manufacturing workers need to compete for service jobs and bear the cost of the economic transformation.

The overexpansion of the service sector has been unexpected. No human resource planning has been made to cope with the growth of the labor demand. Furthermore, the lack of confidence in the post-1997 era has led to the emigration of professionals. The shortage of professional and managerial personnel has pushed up wages and prices of services, causing higher inflation. Finally, the government has yielded to the pressure of the business communities to allow an import of Chinese labor. With the export of manufacturing jobs to southern China and import of Chinese labor, the economy is increasingly integrated with the Guangdong and the larger Chinese economy.

The regional division of labor is structured in a way that Shenzhen and the Delta cities have become similar but separate entities dominated by H.K. capital, and compete against each other for foreign direct investments and industrial subcontracting. The growth in industrial processing in the Delta cities was even faster than that of

Shenzhen since the mid-1980s. The industrial structures of both Shenzhen and the Delta region are vertically integrated by that of H.K. with little complementarity to each other.

The impacts of foreign investments on Shenzhen SEZ are mixed, with the co-existence of companies of different capital origins and resources, forms of investment and subcontracting. The SEZ has attained limited technology transfer. Skill transfer is confined to production, to the exclusion of marketing and R&D. The massive use of migrant workforce reduces the possibility of skill retention. The linkage effect is limited, since most of the production involves the manufacturing of finished consumer products for export and using components and parts supplied by H.K. and Taiwanese suppliers in Shenzhen rather than the local Chinese suppliers.

The SEZ was set out to be a mismatch of policies. SEZ was caught in all sorts of dilemma without having enough time and resources to support a multi-divisional development. The Chinese authorities desired technology transfer without providing the appropriate conditions to attract technology givers and the adequate legal framework to guide the joint ventures. The policy-makers have not defined the kind of technology and industries they wanted to attract. The reformist Beijing officials and Shenzhen authorities were eager to boost the economic growth of the SEZ and to demonstrate the experiment of "one country, two systems". Long-term goals were sacrificed to short-term results; the SEZ became a haven for H.K. manufacturers, service industrialists,

property developers, and the Chinese bureaucrats and "red capitalists".

Facing intensifying competition from the Pearl River Delta region for industrial processing and failing in upgrading its technology, the SEZ is attempting to follow the pathway of H.K. to build a service economy. While H.K. has taken 50 years to go through various stages of economic development, Shenzhen seems to have compressed the stages of development into two decades. The developments of both cities have been driven by very different political-economic forces and circumstantial factors. Whether the H.K. model can and should be repeated is questionable. A one-dimensional orientation towards service sectoral development without technological and industrial upgrading will make both economies vulnerable to global economic fluctuations.

The rising costs of land, living and labor in southern Guangdong will continue to drive H.K. manufacturers to move northwards. At certain points, H.K. managers cannot commute back to H.K. in a day or two, and the coordination and transportation costs will increase. While Guangdong has been closely tied to H.K. and tends to accept the H.K. way of doing business, the inland may not. The animosity towards "Hong Kong Chinese" may not manifest in the same way as the animosity towards affluent Chinese in Malaysia and Indonesia. When H.K. becomes a part of China, H.K. industrialists will appear less as foreign investors but more as national entrepreneurs; the polarization is then between classes and

regions internal to a country. Moreover, there exists a possibility for China to suffer from labor unrest and a breakdown of law and social order accumulated by economic and regional inequity. An over-dependence on Chinese labor and land supply will subject H.K. manufacturers to the risks of Chinese economic fluctuations and social instability.

An import of Chinese labor to H.K. is likely to drive down the local wage increase in real terms, and to strain the supplies of housing and social amenities in the congested city. The city is likely to have an enlarging economic inequity with the H.K. managerial and professional personnel prospering from the expanding service economy, and the local and imported labor sharing much less of the prosperity and being kept divided. This scenario is similar to that of the global cities such as New York and Los Angeles.

An enlarging economic inequity is also witnessed in Shenzhen. Rampant speculation has led to a rise in land costs and the emergence of a visible leisure strata. These newly rich, together with government officials, members of the military, police units, entrepreneurs and professionals enjoy luxurious lifestyles. However, the temporary workers receive low wages and little welfare protection. They are restricted to much of the government-funded social amenities. The increasing economic inequity has given rise to contradictory social attitudes, which can cause problems if the underprivileged demand a greater share of the economic prosperity of the SEZ.

The negative social and economic impacts of the regional economic integration--overheated property development, high inflation, and economic and social inequity--are similar to those taking place in the Growth Triangle discussed by Personage (1992). The alienation of the SEZ temporary workers from the inland is similar to that of the migrant workers in Johor and Batam from their mainlands.

Shenzhen has gone two fast in focusing on service sectoral development without consolidating a manufacturing base. H.K. has apparently gone far to service sectoral development without the corresponding industrial upgrading to support a balanced development. Both cities need industrial upgrading to sustain a more balanced development which can in turn serve to translate the existing regional relationship into a more positive, developmental one.

H.K. has the preconditions to attract higher value-added design and development processes, as seen in its strong telecommunication, information and media, and transportation and banking infrastructure. The electronics industry of H.K. has largely lost in its race with South Korea and Taiwan in the medium-end electronics production for the global markets. It can instead target technologies demanded by China.

China needs to upgrade its product and process technology. Many state-run companies have been equipped with relatively advanced technology which remains underutilized. The production of consumer electronics is heavily dependent on imported components. The production of electronics components

(such as ICs) can enhance the forward linkage since the products can be supplied to the intermediate goods sectors. The H.K. industrialists can facilitate technology transfer by organizing three-way joint ventures, jointly with global corporations and Chinese companies. Shenzhen is an ideal location for land supply due to its proximity to H.K. Moreover, Shenzhen needs to promote technological upgrading.

The Chinese officials should not give too many concessions to foreign investors whose profiteering will increase the economic and social costs of the region. The Shenzhen government should strengthen law enforcement, fight against corruption, and reform the bureaucracy and work culture. These will help create a more predictable investment environment for investors. It also needs to develop industrial training and retraining, and to evaluate its household registration policy to allow more migrant workers to become permanent residents so as to maintain a stable workforce.

Industrial integration requires supporting policies in territorial, labor, communication and transportation, housing, and environmental protection. Unfortunately, the present governments of both sides have not collaborated in the development of the infrastructure for this region.

9.2. A REFLECTION ON THEORIES

The predominance of H.K. capital and the prevalence of H.K. currency and culture over Shenzhen, the Delta region and the larger Guangdong has left the impression that the latter

is the "colony" or "satellite" of the former--much like the traditional core-periphery relationship. The prevalence of processing trades in the Delta region and the SEZ's failure in attracting higher value-added production and technology transfer seem to confirm the theories of world system, dependency and NIDOL. Wallerstein has argued that the semi-peripheral countries themselves were exploiters, benefitting from the exploitation of peripheral countries.

However, H.K. lacks the traditional characteristics of a core. While H.K. is an economic center of southern China, it needs the economic backing of the Chinese government. It is vulnerable to the political turbulence of China (as seen during the Tiananmen Event 1989), and conflicts between the British-H.K. government and the Chinese government (over the future of H.K., airport-building and democratization reform). After Milton Friedman's recent prediction of the elimination of the HK dollar by the Beijing government after 1997, the value of the HK dollar fell drastically and recovered only after the reconfirmation by the central bank of China to keep the currency after 1997 as stated in the Basic Law (Holloway, 1995; Silverman, 1995).

H.K. has a low technological level and is unlikely to be the technological core of the larger China. If H.K. does not upgrade its technology, it will face intense competition from Shenzhen and the Delta region. Unlike a traditional core which has a widespread network of satellites, H.K. depends primarily on China for labor and land supply. It will

certainly suffer from a breakdown of production in case of domestic turmoil in China.

The argument that Shenzhen and the Delta region are "economically colonized" by H.K. and suffer from the exploitation of H.K. is not totally valid. The Chinese authorities have allowed or even encouraged the massive use of migrant workers and have been lax in enforcing the Chinese law and regulation. The reinforcement of the "gift economy" (corruption and bribery) by H.K. capital and Chinese authorities has left the Chinese working classes unprotected from exploitation. The argument overemphasizes the role of external factors and underestimates the role of internal factors in shaping economic and social development. The Chinese ruling classes should not be seen as passive and unable to make a change.

The theories of dependency, world system and NIDOL criticize global corporations of exploiting the labor resources and markets of Third World countries without transferring appropriate technologies to these economies. Third Worldists or south-south cooperation advocates consider the ANIC capital more liberal in transferring technologies, and more willing to accept lower equity participation in the host countries. The polycentric character in their managerial approach renders them more relevant to the development needs of the host countries.

The findings in this research do not lend support to these hypotheses. Most of the H.K. manufacturers aim at

making quick profit and reducing production costs. They tend to play on personal connections to get around Chinese law and regulation. The transfer of technology is limited and the local content of their production is low. Most of them exercise a total control over the production and management without the participation of local partners. While global corporations may not employ advanced technologies, they tend to maintain a more stable subcontracting relationship, extend technical assistance to subcontractors, and provide systematic training to workers.

One should avoid romanticizing the complementarity between the ANICs and their regional neighbors, and between the semi-periphery and the periphery. One should be aware that the global corporations are not uniform and static. Foreign companies which do not have the economic power of the world-class corporations have increasingly sought partnerships with H.K. companies to invest in southern Guangdong. Further research may need to devote a focus on this type of partnership in shaping the regional division of labor.

Regional integration has been intensifying with the impending unification of H.K. and China. The only alternative for the region is to translate the existing regional relationship into a more positive, developmental one. This will depend on the political decisions of the present and future governments of both sides. Leaving the decisions to the invisible hands of the market will only enlarge the economic, social and regional inequity.

GLOSSARY

Add-on-cards: a printed circuit board assembled and designed to be added to the motherboards of a personal computer to provide additional functional capabilities.

Bit: binary digit or basic unit of information (0 or 1)

Byte: usually 8 bits, a second-level unit of information, Storage of one character.

chip: an integrated circuit; sometimes the unpackaged device.

IC: integrated circuit; a small semiconductor device (usually silicon) containing many interconnected circuit elements.

LCD: liquid crystal device;

K: short for kilo which in computer terminology refers to 1,024 bytes; similarly M (for mega) refers to $(1,024)^2$=1,048,576 bytes.

Microprocessor: a chip containing a whole central processing unit (including arithmetic, logic and control functions) of a computer.

Motherboards: a printed circuit board that integrates all the major functional elements of a personal computer, including the CPU, other microprocessors, memory, input/output connectors and other electronic components, and performs the central control functions of a personal computer.

Peripherals: external devices connected to a personal computer, such as printers, monitors and keyboards.

RAM: random access memory; a device to store and retrieve information.

Software: set of instructions or programs telling the hardware what to do.

LSI: large-scale integration; refers to the number of circuit elements on a single chip.

Wafer: a thin round disc (usually around 3 to 5 inches in diameter) of semiconductor material on which many identical chips are made at the same time.

FOOTNOTES

Chapter 1

(1) The South Korean government has recently permitted its national companies to conduct processing trades with North Korea. The companies export materials to North Korean factories for processing and the products are re-exported to the South.

(2) Dalian SEZ (in Liaoning Province) which was a part of Japan's Manchurian empire has now become a hub for Japanese economic activity. Eight non-stop flights (four hour flight time) per week between Japan and Dalian are available to facilitate Japanese managers to commute back and forth on the same day. Land in Dalian is much cheaper than that in the SEZs in the South and Shanghai's Pudong area. The average annual wage is about US$700, less than half of that in Shenzhen SEZ. Presently, 100,000 workers are employed by Japanese factories, manufacturing from chopsticks to industrial motors. Of the US$1.7 billion total Japanese investment in China in 1994, one-third was in Dalian. More than 800 companies have set up manufacturing plants in Dalian. So far, Japanese companies have invested more than US$6 billion in this city of 5.4 million people.

(3) The Taiwanese government, while relaxing restrictions on trade, investment and travel to China in 1987, still limits trade with China to 10% of its total exports and imports in order to avoid a dependence on China. The government has loosened some regulations on Taiwanese investment in China in 1993. It allows investors to commit up to US$1 million during a two-year period without registering the venture. It permits more manufactured items for investment and certain industries on a case-by-case basis. Some 100 special cases were approved in mid-1993 including bicycles, motorcycles and other higher technology industries.

(4) Despite three quarters of its population being ethnic Chinese, Singapore has been late in investing in China. China's Minister of Trade and Economic Cooperation, Wu Yi, undiplomatically called Singapore's investment in China up to 1992 as "small potatoes". But now Singapore is expanding its investment quickly. In 1992, Singapore companies have invested US$1 billion in China, more than the entire amount invested during the previous 12 years. Senior Minister Lee Kuan Yew expressed a new attitude towards the GT in April, 1993: "We cannot just stick to Singapore and Malaysia... It is convenient, it is near home. They [Singaporean managers] just go there for a day and come back. That is not a real external economy. That is just an adjunct to Singapore, just across the borders."

(5) The electronics industry is composed of numerous products. Different research organizations have different ways of classifying the products. In this research, I use the definition printed in "Hong Kong's Manufacturing Industries 1993" by Hong Kong Government Industry Department, since most of the statistics about the industry I use in this report are compiled by the HKGID. According to HKGID, the electronics industry's product line cover "radio cassette recorders, hi-fi systems, compact disc players, TV sets, calculators, electronic watches and clocks, electronic toys and games, telephones, modems, cellular telephones, photocopying machines, micro-computers, portable computers, computer peripherals, computer-aided design and testing equipment, switching power suppliers, printed circuit boards, liquid crystal displays, quartz crystals, semiconductor devices (including integrated circuit wafers), handheld databank products, fax machines and electronic dictionaries" (p.54).

One has to be careful to read the statistics. Some of the surveys done by HKGID exclude toys and watches and clocks as electronics products. An example is the "1993 Survey of Overseas Investment in Hong Kong's Manufacturing Industries".

Some of the directories published by industrial and commercial federations adopt the United Nations International Standard Industrial Classification of all Economic Activities (I.S.I.C. Rev.2). The electronics products include:
3832 manufacturing of transistorized radios
3834 manufacturing of receivers and communication equipment
3854 manufacturing of watches and clocks--electronic
3844 manufacturing of electronic parts and components
3839 manufacturing of electrical and electronic consumer products
383 manufacturing of electrical and electronic products
3833 manufacturing of electrical appliances and housewares
3831 manufacturing of electronic toys

(6) Of the total manufactured exports in 1987, electronics export constituted 45% in Singapore, 24.1% in South Korea, 23.8% in Hong Kong, and 21.5% in Taiwan.

Chapter 2

(1) While there was no universally accepted definition of the criteria by which a country was classified as a "NIC" (and hence no agreement as to which countries should be so defined), a number of researchers adopted the OECD (1979) grouping of NICs--H.K., Singapore, South Korea, Taiwan in Asia, and Mexico, Brazil in America, and Portugal, Greece and Spain in Europe.

Chapter 3

(1) At one extreme, technology is how something gets done (Schumacher, 1973). Near the other extreme, technology is carefully defined as an "intricate set of detailed knowledge, skills, and specifications of product designs, production and processing techniques, and meaningful systems used to manufacture particular industrial products" (Baranson, 1978:13). Some typologies have been created such as "hard" and "soft", "embodied" and "disembodied" technology, etc. The "hard" and "embodied" technologies refer to the tools, equipment and machines. The "soft" and "disembodied" refer to the management, marketing, and finance handling skills and knowledge.

(2) In this research, I follow the classifications of the size of manufacturing companies in H.K. and in China by the following two studies. Sit and Wong (1988) defines H.K. "small-medium" companies as of 1-199 workforce. Thoburn et al. (1989) defines H.K. subsidiary in China as a "small" company when it has a workforce of 1-49 workers, as a "medium" company with 50-499 workers, or a "large" company with more than 500 workers.

(3) The other two "lai's" are "lai yang zhi zuo" (manufacturing according to samples) and "lai liao zhuang pei" (processing using assembly line operations). Most processing agreements are small-scale investments and take two forms. In the first form the Chinese provide factory premises and equipment and the foreign partner supplies the required raw or semi-finished materials for processing and assembly. The job is specified in the contract with a fixed delivery date. The Chinese side has no control over the processed or assembled product. It receives a processing fee to cover rent, wages, water and electricity supplies. In the other form of cooperation, the foreign partner supplies the Chinese side with the necessary equipment at an agreed price. The Chinese side pays in installment by charging lower processing fees.

(4) In compensation trade, the foreign partner rents the necessary equipment and technology to the Chinese side which repays in the form of its output as rent. The main aim of this cooperation is to transfer advanced technology to existing Chinese companies.

(5) It is not easy to get an in-depth answer to open-ended questions covering various areas in an hour's interview and a half-an-hour follow-up interview. The findings of the impacts of foreign direct investment on Shenzhen remain exploratory and tentative. In the interviews with the Japanese personnel who do not speak English and Chinese and interpreters are involved, half of the time was reserved for translation. In some cases, the interview took place in an office environment

when the respondents need to answer phone calls or coordinate some tasks in the office.

An ideal situation for an interview to take place is in a setting outside the office. Redding (1990) studies overseas Chinese capital and suggests that an ideal setting of an interview is a restaurant. This can happen only if the researcher personally knows the respondents. Unfortunately, this does not happen in my case. In this research, I have made an interview for five hours with a manufacturer first in his office and then in a restaurant. This interview was comparatively in-depth. Another interview took place after office hour (for two hours) and the conversation was also fruitful. Time, space and personal relationship are important in conducting interviews.

I have tried to let the respondents elaborate the topics they were interested in rather than insisting on collecting data for all the questions on the questionnaire. The advantage is that more insider's experience can be collected. However, this is done with a trade-off that comparison between companies is at times difficult to make.

(6) According to this manufacturer, he receives often requests for interviews. Usually, his secretary discards immediately these requests and will not pass them on to him.

Chapter 4

(1) The deep water harbor of H.K. can hold a ship carrying 5 to 6 ton. Shenzhen does not have such a harbor. Shanghai's Wang Po Jiang has shallow water. Hong Kong's deep water bay enables it to dominate the whole southern China trade.

(2) H.K.'s population increased from 1.6 million in 1941 to more than 2.3 million in 1950. The city had an estimated Chinese refugee population of 667,000 refugees in 1954. The unemployment rate was 15.1% among post-war immigrants. The integration of this large number of unemployed people into the labor market posed a great challenge to the government.
(3) China's participation in the industrial sector is difficult to quantify, owing to the practice of using H.K. residents as middlemen to disguise real ownership. The investments in real estate are more difficult to access. The share has definitely increased with the tremendous Chinese effort to sustain the real estate market during the 1982 slump in prices.

(4) There is counter-evidence to capital flight and emigration. The number of foreign companies roughly doubled during the period of Sino-British negotiation. Still there has been more companies coming into H.K. than leaving (SCMP, 20-7-94). The total number of highly educated people in H.K.

throughout the period has increased (Overholt, 1993). The Singaporean government has tried to lure H.K. professionals to immigrate, but its attempt has not been successful. Only 6,000 H.K. people have migrated to Singapore while 6,500 Singaporeans have migrated to H.K. Singapore's population is only half of that of H.K. That means Singapore's emigration to H.K. is twice the rate of H.K.'s emigration to Singapore. Moreover, the emigration has become stabilized after 1992; the rate of emigration in 1993 is 20% less than that in 1992. A growing number of migrants have returned to Hong Kong (China and Hong Kong Economics, 7/1994: 12).

(5) The idea of setting up SEZs emerged before the 1980s. In the early 1960s Zhou En Lai proposed special areas of the country where export facilities would be set up for light manufactured goods. These were named as "chukuo jianggong qu" in Chinese, a term later associated with Taiwan's export processing zones. These were not operated until after the Cultural Revolution; some 27 bases were established in Guangdong, Jiangsu, Shandong, Zhejiang, Liaoning, Hebei provinces, and some autonomous regions. Specialized export factories (98 of them) were also set up. These factories accounted for 33% of all Chinese export receipts.

(6) "San ci" are exempted from income tax for 2 years starting from the first profit-making year and allowed a 50% reduction from the third to fifth year inclusive. After the expiration of the above-mentioned period, a company, whose value of export products amounts to 70% or more of the total value of products manufactured in that year may, upon approval of the tax authorities, be subjected to income tax at the reduced rate of 10% for that year, while a high-tech company may get a further extension of 50% reduction for 3 years (SMEDB, 1994: 659).

(7) Other encouraged projects include infrastructure (traffic transportation, post and telecommunication, energy, water supply and garbage disposal), mechanical and electrical projects, electronic and telecommunication equipment production (computer and software, communication industries, micro-electronics and its components, optic-electronic technology, office automation and high-class household appliances), manufacturing of transportation equipment and petro-chemical industry, construction material, jewelry industry and new products (biological engineering materials, new energy source materials and electronics information materials).

Chapter 5

(1) The R&D of Japan was characterized by a bottom-up approach with a focus on the manufacturability. For example, the circuits (of the semiconductor) chosen to develop were those

whose design and process specifications guaranteed a high reliability. This enhanced product quality, product demand, and cost reduction, and thereby accelerated product cycles. In the U.S., the long predominance of military requirement has led to a different set of priorities. The focus was on very demanding system performance requirements, which led to a top-down approach to circuit design with little concern for the manufacturability, production cost and the speed-to-market. This has led to a tradition of pursuing the "state-of-the art" or "breakthrough" technology (Ernst et al., 1992: 64).

(2) It is the development of a complex and powerful integrated circuit which can embody a complete processing unit.

(3) Japanese companies are increasingly setting up operations in Singapore to develop electronic switching equipment software for Third World countries, technical training for other Asian countries (Matsushita, Sony and Toshiba), component procurement (Toshiba, Mitsubishi, Sony, NEC and Fujitsu), and integrated circuit design (Matsushita and NEC). Aiwa has established a R&D center to develop radio-cassette with compact disc player. Singapore now accounts for more than 50% of Aiwa's total production (Yamada, 1990).

(4) The Singapore Technology Corporation Limited--a diverse group of companies created with government investment in November 1987--announced the formation of the Chartered Semiconductor Limited. Chartered Semiconductor is a joint venture between STC, and Sierra Semiconductor Corporation (U.S.), created to build a state-of-the-art CMOCs facility to design and build application-specific integrated circuits. STC first invested in Sierra Semiconductors in the Silicon Valley, and obtained technology transfer from Sierra. It then invited National Semiconductor, a potential major customer to participate. The three partners buy 50% of the joint venture's production, making it financially viable from the beginning. 55 engineers from Chartered Semiconductors were initially trained at Sierra Semiconductor and National Semiconductor facility in the Silicon Valley (Dataquest 1992).

(5) Shenzhen produces 20% of the country's color TV output; 22.34% of the country's tape-recorder (including Hi-fi); 30% of the country's telephone set; 25% of the country's floppy disk (Shenzhen Industrial/Commercial Directory, 1993: 670).

Chapter 6

(1) Henderson (1989) documented that Hitachi carried out design, assembly and testing in H.K. in 1986. But the production was stopped in 1978, according to a manager of the company (with whom I had a telephone conversation in August 1994).

(2) Each worker is paid only a monthly wage of US$47, even lower than that in Shenzhen and the PRD areas. The disadvantage of manufacturing in Suzhou is that the delivery of finished products to H.K. takes two days rather than one day as that in Shenzhen and Dongguan (north of Shenzhen).

(3) The company ranked 23th on Fortune's 500 list of U.S. Industrial Corporations in 1993. It is the third largest semiconductor company in the world, and ranked second in North America and third in Asia-Pacific electronics industries.

(4) Quality includes reliability and accuracy. High yield has to be ensured so as not to waste the components (wafer) provided by the contractors since the fabricated wafer is rather expensive. Otherwise, the contractor's confidence in the production capacity of the subcontractor will be weakened. Quick delivery to the contractor has to be ensured. Usually, the assembly process of a stock is finished within 8 days after the order is increased. Efficient and frequent communication with contractors and suppliers, and the company's marketing office in Surrey (U.K.) and San Jose (California, U.S.) has to be maintained for sourcing new technologies and raw materials, detecting market trends and looking for customers.

(5) The ISO9000 series of Standards are set by the Geneva-based International Organization of Standardization (ISO) for quality management and quality assurance, based on the earlier British Standard 5750 with input from countries like the U.S., Japan and Germany. Around 50 countries have adopted the ISO9000 series as their national quality system standards. This is particularly important for companies trading with Europe, since the ISO9000 certification is increasingly becoming a criterion to get European customers (H.K. Computer Journal, 7/1993).

(6) COCOM refers to the Coordinating Committee on Multilateral Export Control, a body of the OECD. The COCOM was set up to draw a list of technology and goods that were to be forbidden to export to the communist countries by its members. The setting up of COCOM was back to the Red-scare days after WW II--a time of "binary man" when countries and people could be defined as simply communists and non-communists. Swire Shipping had attempted to export floppy disk drive assemblies and testing equipment to Shenzhen SEZ without import and export licenses and was imposed a fine. But the equipment was for manufacturing computer games or television games which were common in the streets of H.K. Another example was that the Bank of China, which had had no trouble getting an Amdahl 5890 400E mainframe for its H.K. branch, but faced almost zero chance of getting COCOM approval for a similar machine in the mainland (Computer world, 7-6-1989). The ban on technology export to China was finally uplifted in mid-1994.

(7) Firstly, the Taiwanese government set up fabrication laboratories to experiment fabrication and invited private investments afterwards. Private entrepreneurs did not need to devote resources on experimenting with the fabrication process which demanded land and capital. Secondly, the government has also set up institutes to do research and design of ICs. These institutes gather basic information on design and equipment for the private sector which can then avoid the costs of experimenting on a trial basis. Thirdly, the government has also devoted efforts in human resource training.

(8) For this particular product, two South Korean producers came top in the world market (one produces 100 million per month and the other produces 80 million per month). Company O has started later and become the third largest, producing 50 million and it succeeded to seize a large share from the Korean firms. A Taiwanese producer comes fourth, but the production output is rather insignificant.

(9) Sanyo Electric Inc. was founded in 1947 in Osaka, manufacturing bicycle lamps. It entered into consumer electronics business in 1952. Currently, it has been a leading company in the manufacture of batteries and industrial refrigeration systems in Japan. In recent years, Sanyo is diversifying into semiconductor production and information sectors.

Sanyo has been adopting a global strategy concerning production and marketing. It has developed its global production system concentrating on four regional markets (Japan, East Asia, the U.S. and EC), to conduct its procurement, manufacturing, sales and investment by foreign currency in each market.

Sanyo Electric Inc. was one of the Japanese companies to start offshore production. It set up its first offshore production in H.K. in 1960 and then continued its overseas expansion. Presently, Sanyo has 50 overseas plants and only 16 domestic plants. In 1990, it had an overseas employment of 343,000, which is 1.5 times of its Japanese employment of 236,000. The main reason behind its global emphasis is believed to be the difficulty of gaining domestic market as a latecomer. This has led to its heavy dependence on exports. Facing the import substitution policies of Third World countries in the 1960s, Sanyo established its production in countries which it targeted as markets. During the period of 1976 to 1985, Sanyo has set up only one new plant in Japan, but 19 new plants in: the U.S. (3), EC (3), Korea (3), China (6), and other countries. The employment in ANICs has been decreasing, while those of the ASEAN and China have been increasing.

(10) Three major shareholders are listed as follows:
(I) Daw Computer Systems Ltd., a H.K. company which develops business application software and sells mini- and micro-computer systems. DAW was one of the first authorized deals for IBM personal computers in China.

(II) Bejing Legend Holdings (The New Technology Developer Inc. Institute of Computing Technology, Academia Sinica). It specializes in the development and sales of computer systems and Chinese-language products. Beijing Legend Holdings was founded in 1984 and is owned by the Institute of Computer Technology, Academia Sinica of China with the full support from the central government.

(III) China Technology Trade (H.K.) Ltd. is a joint venture that brings together many companies which have sound financial backgrounds and strong connections with China.

(11) Surface mount technology (SMT) is an electronics assembly technology which replaces the traditional "through-hole technology". SMT is not really a new kind of technology. It was first developed in the early 1960s, but has been widely applied in electronic production only in the 1980s. It can be deployed in the production of a wide range of electronics products (consumer electronics, computer and computer-related products, and telecommunication equipment).

The use of SMT has a number of implications on product quality, factor intensity and scale economies. Firstly, SMT reduces the space between components as well as capacitance and inductance, and thereby improves electrical performance. The use of SMT makes it easier for companies to meet the needs for advanced high frequency analog and digital design, and for the design of high gain low noise circuits and microwave circuits. Secondly, SMT is a land and labor-saving technology; it mounts numerous components onto circuit boards more efficiently and precisely than the traditional through-hole technology. Thirdly, the use of SMT increases capital intensity and reduces labor intensity. In using SMT for assembly, extensive automation can be applied from component stock-keeping to the soldering of finished products.

The basic cost of setting up a SMT assembly is not too high, roughly about US$85,000. Most SMTs are imported from Japan. Some relatively large companies in ANICs have been using SMTs. The use of SMTs helps the ANICs survive the competition from their neighboring Third World countries which have comparative advantages in cheap labor supply.

According to a survey undertaken by the Hong Kong Productivity Council in 1986, the SMT as compared to the "through-hole" technology, can lead to a reduction of 30-40

percent in labor cost, but an increase of 15-35 percent in material costs and similar operating costs.

Chapter 7

(1) A regional headquarters (RHQ) is defined as an organization which has control over the operation of one or more other offices or subsidiaries in the region without the need to consult the overseas parent company. The most recent survey (done by the government of New South Wales, Australia, and the city of Sydney) concludes that H.K. holds 51% of Asia-Pacific Asia's regional headquarters; Singapore, 29% and Tokyo, 20%. H.K. is presently holding more than 600 RHQs and 800 regional offices and the rate of growth has continued despite the 1997 question. In the most recent survey by HKGID 1993, the management of 144 RHQs (or 95%) and 145 regional offices (94%) indicated that they would continue to keep their operations in H.K. Only 7 companies had shown an intention to relocate their RHQs/offices. The main reasons for the relocation were the political climate in H.K. (6 companies had plans to relocate before 1995) and its cost base.

(2) In clothing, there has been a shift from production of simple grey fabrics to a wide range of high quality fabrics and fashionable garments, including leather and clothing. In plastics and toy industry, the focus of production has shifted from simple toys and artificial flowers to a wide range of sophisticated products such as remote-controlled toys, TV games, furniture, casings and frames for consumer electronics and packaging materials.

(3) This is a research done by the Far East Economic Review. The companies were ranked in their home countries according to five criteria: (I) quality of services or products; (II) vision; (III) innovativeness; (IV) financial soundness; and (V) that others try to emulate.

(4) Hong Kong is served by two cable landing stations, that offer fibre access to the trans-oceanic systems. The 280 Megabit Hong Kong-Japan-Korea cable and the 420 Megabit Hong Kong-Taiwan cables, connect with TPC-3 through Japan or the Guam-Philippines-Taiwan cable, and with the North Pacific Cable through the Miura-Chikura cable in Japan. Additional capacity, is offered by the 1,120 Megabit Asia-Pacific Cable connecting Hong Kong with Singapore, the Philippines, Taiwan and Japan. Plans were announced in Nov. 1992 for an Asia-Pacific Cable Network linking Hong Kong, Brunei, Guam, Japan, Indonesia, South Korea, Malaysia, Singapore, Taiwan, Thailand and the Philippines. Hong Kong Telecom offers access to AsiaSat and Palapa satellites and has antennas directed at the Indian Ocean region Intelsat satellites.

These long-haul and regional cable, and satellite systems support the busiest telecommunications centered on the Pacific Rim. Global Corporations hub their Asia-Pacific network in Hong Kong which, according to "Communications Week International", commands some 50% of the Asia-Pacific hub market. H.K. holds 51% of all TNCs' regional headquarters in Asia. "Pacific Telecommunications" regards H.K. as having one of the most advanced communication infrastructure in the world.

Hong Kong is also the communications gateway to China. To date, H.K. offers the only fiber optic access to China. This is via the 4 times 140 Megabit cable linking H.K., Shenzhen, Dongguan, Huizhou and Guangzhou, and the new 565 Megabit cable linking H.K. and Shenzhen. Through H.K., IPLC (International Private Leased Circuits) now serves more than 70 global companies with operations in China. Public video conferencing was inaugurated between H.K. and Beijing. H.K. telecom's roaming service is being used in major cities in China (H.K. Computer Journal, 3/1993: 21).

(5) Decades of labor struggle together with an increasing economic prosperity have led to more protection and welfare for workers. Women and young workers (between 15-17 years old) are protected by law to work not more than 8 hours a day and 48 hours a week. Young people under the age of 18 are prohibited to work overtime. The overtime work for women in industrial employment is restricted to two hours a day and 200 hours a year. Women and young workers must be given one day off per week. Most factories are closed on Sunday, and some adopt a five or five-and-a-half day week scheme (44-48 hours per week) without any reduction in wages. Employees are entitled to 11 statutory holidays a year if he/she works continuously for an employer for 3 months preceding a holiday. All workers are entitled to seven days' annual leave with pay after working for a year under a continuous contract with the same employer. Sickness allowance is reduced to two-thirds of a worker's pay for a sick leave period of more than three consecutive days. A female worker who has served the same employer for 26 weeks is entitled to 10 weeks' maternity leave. If she has 40 weeks' service and no more than two surviving children, she is entitled to pay during her maternity leave of two-thirds of her normal wages. When a pregnant worker who is entitled to maternity leave has completed 12 weeks' service with the same employer and gives notice of her intention to take maternity leave, the employer is prohibited from terminating her contract of employment till the date on which she resumes work after the maternity leave (Chen, 1991, commissioner for labor). A violation of such regulations induces severe punishment. The employers used various methods to replace experienced, higher-salary workers by newer workers. Companies remove the long serving workers

so that they can avoid the salary increase and end-of-the year bonus (Dai Kung Pao, 9-1-1994).

(6) According to (Watanabe, 1993), the Chinese side often discloses drawings to affiliated domestic companies or makes copies and sends them to other sectors.

(7) It is reported that some people from rural area have to pay a year's salary to local cadres for a permission to travel so that they can go to coastal areas to look for jobs. Guangdong as a whole has attracted 6.5 million migrant workers. Employers often employ migrant workers (mostly from Qingyuan, Guangxi, Hunan, Sichuan, Jiangxi, Zhejiang and other provinces further north) since they demand lower salary and are more obedient. Every year before Chinese New Year, about 1.7 million migrant workers leave the PRD for their home villages and bring relatives and friends to fill the vacancies in their workplace (Liu et al., 1992: 84)

(8) According to a Shenzhen Municipal government research of more than 5000 companies, more than 600 factories have not reported to the government about their recruits. More than 70,000 workers are not registered, and child labor are employed (The Nineties, 4/1994: 58).

(9) A recent Workers' Daily reports a survey of Shenzhen's Futian district. More than half of 465 companies have not paid accident insurance. In a neighboring district, two thirds have not paid unemployment insurance fees. Some factories also routinely neglect to have worker's contracts validated by local authorities, leaving sacked workers no resource. Less than 10% of the small factories owned by H.K. and Taiwanese investors are unionized. The investors get around the regulations through playing on personal connections and paying for protection.

(10) The clauses protecting the workers' welfare of Guangdong Province are largely not observed by the employers except Huaqiang-Sanyo. The clauses (The Contemporary, 6-15-1994: 81-3) state:
(I) A worker who is employed for more than 30 days is entitled to receive a contract from the employers.
(II) A worker is protected by law to work not more than 5 & 1/2 days per week and 8 hours per day.
(III) Workers are entitled to the right not to work overtime. The overtime work is restricted to 48 hours per month. An employer has to get the consent of workers when he/she requires workers to work more than the allowed limit and to report to the local LSC.

(11) Phillis Andors and Trini Leung documented the strikes of Sanyo workers. The Japanese management complained that Chinese workers were interested more in the wages than in

skill development. A manager complained about the lack of female cooperation during tea breaks, and expressed the necessity of teaching manners to Chinese female workers. The workers complained that Sanyo pushed them too hard on quality and efficiency, and the surveillance system within the factory was a major source of discontent.

(12) The Zhili fire disaster has aroused the concern over foreign investors' neglect of industrial safety in the SEZs. Over 80 workers were burnt to death in the fire accident at the factory, Zhili Toy and Crafts factory, a H.K venture on November 19, 1994. Another toy factory being built without authorization on a Shenzhen industrial site collapsed due to shoddy construction, killing at least 11 workers and injuring 27 others on June 4, 1994. In Zhuhai SEZ next to Macau, 76 workers who were sent back into a burned out textile factory to salvage materials, died when the building collapsed in June 1994.

(13) The move of suppliers following their end-users is different from that between the Japanese companies and their suppliers. The relationship between producers and suppliers in H.K. is not long-lasting and the suppliers do not rely on particular companies. It is simply due to the geographical proximity that suppliers can also flexibly move north across the border to catch the business over there.

(14) The corporate group of the CTV producer in this research has established two joint ventures with two Japanese companies--one producing VTR (with 100% access to China market), and one producing hi-fi audio products, also in Shenzhen. Lafe Holdings, a H.K. listed company has entered into a joint venture with Control Data Corp., a U.S. computer manufacturer, to develop computer peripheral products in PRD areas.

(15) According to a respondent who has a plant in Dongguan, many existing local ventures are actually units set up by the officials in the North. They make use of the SEZ to make profit. He gives an example: a provincial government gets an annual grant from the Education Ministry to finance educational programs. The governor may then send a person, maybe his/her nephew to open an office in the SEZ to "generate more monetary resources to finance the education". The nephew may order 100 computers for "raising the computer literary" of the province. He charges more than he actually pays, and certainly this sum of money will be shared by the officials who give approval to this project.

Slowly, the company plans to expand to computer manufacturing. This sounds "productive" to the Chinese leadership because the computer will be labelled as "made in China". The governor may be worried that the nephew may

embezzle and he himself will be held responsible. He would rather set up a manufacturing company to provide financial support. The nephew will then import a turnkey project.

The other way is to try to "fish" a foreign partner. A foreign partner has to bring in cash or equipment of the agreeable amount. Then the account of the Chinese company has a lump sum of money to maneuver. Moreover, it also gains prestige especially if the foreign partner is a "Westerner".

(16) Manufacturers complain that their truck drivers are forced to pay more than 10 items of charges on the way to their operations (fees for crossing a bridge, road repair, road maintenance, auto insurance, license fee, and different villages and towns have different policies and charges (see also China-Hong Kong Economy, 1-5-1993).

Chapter 8

(1) This section on the nature of the state-capital alliance has drawn from Chiu (1992).

(2) Prior to industrialization, there were four groups of banks: (I) British banks (the most powerful ones; the H.K. Bank and Chartered Bank were the only two issuing the H.K. currencies); (II) banks owned by China; (III) native banks; and (IV) non-British foreign banks. There existed neither a central bank nor a central state agency to regulate banks and monetary supply like the Monetary Authority of Singapore.

(3) This section draws from Miners (1987: 107-111), and Rabushka (1976: 12-34).

(4) Some land auction practices showed that the government upheld a high land price policy. Firstly, on several occasions, the auctioneer proclaimed that the bid price was not high enough and withdrew the auction. Secondly, the auctioneer himself could take part in the bidding and had the right to force up the land prices, and this was a mockery of the government's proclaimed reliance on market forces (Wu, 1992).

(5) This is according to an interview with Li Pang Phi, the Chairman of the Electronics Industry Committee of the H.K. Merchant Association in 1978 (Min Pao, 7-14-1978).

(6) IN 1990, First World countries each spent 2% to 3% of GDP on supporting R&D: Japan (2.92%), Germany (2.9%), U.S. (2.8%), and France (2.38%).

(7) Several rallies were organized by more than 200 unions representing 200,000 workers to protest against the labor import scheme in 1992 (SCMP, 1-29-92; SCMP, 2-24-92). But a

collective strike is inconceivable. History reveals that such could happen only with a political reason behind: anti-imperialism behind the two general strikes in the 1920s; the extreme-left motivated strike of 1967 and the short strike to support the Tiananmen Square movement in 1989. The pro-China labor organizations hesitated to support a general strike since this will only antagonize the Chinese authority which aims at maintaining H.K.'s prosperity and stability (Economic Daily, 1-10-1994).

(8) Tokyo is the region's capital for the distribution of loans, but it cannot easily takeover over H.K.'s origination role since it is too expensive a place to do business, and its language is not widely understood by foreigners. Its financial markets are so big and complex that they have become all-absorbing preoccupations for Tokyo financial executives. Bangkok has inadequate transport and telecommunication infrastructure. Taipei has a restrictive security environment. Kuala Lumpur and Jakarta do not allow a high degree of free flow of information.

Singapore has surpassed H.K. in the volume of foreign exchange transactions. Singapore arguably has the best airport in Asia, and is a hub for flights to Australia and Southeast Asian countries. It is competing with H.K. as the world's largest container port. It is ideally situated for business in Southeast Asian countries, but limited in developing business connections with East Asian countries. Singapore has tight controls on most markets and the press. Asian Wall Street Journal, Asia Week, Far East Economic Review, CNN news etc. are banned much of the time in Singapore. While some financial companies moved to Singapore after the Tiananmen Event, many returned to H.K. (Overholt, 1993).

(9) It is argued that this offshore scheme will not be easily approved. Recent elections have weakened the KMT, which still supports reunification with China. The Democratic Progressive Party is gaining power and is wary of association with the mainland.

(10) A senior management personnel of a famous second-tier vendor in computer products, in a telephone conversation, revealed that his company practiced the same strategy to get tax exemption. Strangely enough, the manager refused to continue my phone interview the next day as scheduled, and told his secretary that he had not received any interview by me the day before.

(11) The H.K. government planned to finance PADS mainly through bank loans. But international banks responded that they would consider funding the project only with a strong

Chinese endorsement because the repayments would last beyond 1997. Now it has already run over US$23 billion.

British companies have won 70% of the construction contracts for the new airport, and British design specifications were geared towards parts that would have to be procured from Britain. No doubt the Chinese officials saw this as Britain's last minute effort to extract maximum economic advantage from H.K. According to an interviewee, the H.K. public also know the money-grabbing act of the British in this move, but do not openly criticize since they also dislike the interventionist gesture of the Chinese government.

(12) This view of Stephen Miller, the founder of H.K.'s second airline, Dragonair is published in an article titled "One Country, Two Systems, Four Airports", Window, 10-23-1992.

(13) H.K. has been relying on the water supply from China. As a matter of fact, China could have easily taken over H.K. simply by cutting off the water supply. Mao Zedong, advised by Zhou Enlai, decided that H.K. was more useful to China as a window to the global economy than as a part of China. Even during the political turmoil of the Cultural revolution when the Red Guards approached the H.K. border, Beijing in the person of Zhou Enlai ordered the local army commander to clear them away. The deadline for constructing a desperately needed pipeline to supply mainland Chinese water to H.K. fell during the worst period of the Cultural Revolution, but the Chinese side quickened the construction in order to support H.K. (Overholt, 1993).

A P P E N D I X

Appendix I: Questionnaire

Manufacturer Details:
Name:_____(Chinese)_____(English)
Tel #: _____ Fax: _____
Address:
(H.K.)_____
(China) _____
Year of Establishment: _____
Location of headquarters: _____
Country of Ownership: _____ Floor Area: _____

Products:_____
Own-Brand Name Product: _____
OEM Product: _____
Turnover sales (1993): _____

Respondent Details:
Name: _____ Estimated age: _____ Sex: ___
Position: _____
Shareholding or ownership in the firm:_____
Length of employment/ownership with the firm:_____

ON the OPERATION in CHINA

A. INVESTMENT

A1. Please indicate the form of contract of your operation. in Shenzhen.

_____

A2. Please give an account of the specific stipulations specified in your contract.

_____

A3. What is the length of contract of your operation?

_____

A4. What is the scale of your operation?
(I) Please indicate the scale of your investment_____%

(II) Please indicate the percentage of the SEZ investment in the total investment of your company. _____%

A5. What are your production activities in your operation?
(I) Please indicate the production processes.
Processing and assembling _____
products testing and inspecting _____
packing and shipping finished products _____
design operation _____
Others (Please specify): _____

(II) Please indicate the percentage of products finished or processed in your China operation in the total production.
_____%

A6. What have been the changes in the production activities over the years, if any?

_____

A7. Please briefly describe the history of setting up this venture.

_____

B. TECHNOLOGY

B1.(I) What are the characteristics of the production technology of your company? (in terms of labor intensity and automation)

_____

(II)

Type	Place of Origin	Age
_____	_____	_____
_____	_____	_____
_____	_____	_____

B2. Does your company send managers and technicians to supervise the production?

_____

B3. What training does your company offer to the employees of your China operation?

_____

B4. How do you evaluate the technological absorption capability of the employees at your Shenzhen operation?

_____

C. INDUSTRIAL LINKAGE

C1. Please list 3 major components/raw materials your company purchases:

from local suppliers	from H.K.	Other countries
----------	----------	----------
----------	----------	----------
----------	----------	----------

C2. How do factors such as quality, price, the tax involved, and delivery of components from local (within China) affect your decisions made on using Chinese components, if any?

_____

C3. (I) Are the finished products exported directly to market or to your company? _____

(II) _____ % of the total export value

C4. What is the percentage of the finished products supplied to the Chinese intermediate good sector and/or consumer market, if any?
_____%

C5. How do the restrictions such as price control, currency settlement, and license for sales affect the supply to the Chinese intermediate good sector/domestic market?

_____

C6. Does your company subcontract the production of components to local subcontractors?

_____

C7. How does your company choose subcontractors? How stable is the relationship?

_____

D. EMPLOYMENT

D1. What are the categories of jobs in your Shenzhen operation? How many employees of each category are male or female, on a contract/temporary basis, expatriates/locals?

Category	Salary	F	M	C	T	E	L
_____	_____	___	___	___	___	___	___
_____	_____	___	___	___	___	___	___
_____	_____	___	___	___	___	___	___

D2. Has your company recruited employees from the other localities? For what tasks?

_____

D3. Do you consider the operational costs in China low? (costs in terms of):
labor: labor insurance, paid holiday, sick leave, maternity leave _____
power: _____
raw materials _____
management fee: _____
tax: industrial & commercial taxes, added value taxes
_____

E. FUTURE PLAN

E1. What is your future plan regarding your China operation? Why?

_____

E2. Would you continue to invest in Shenzhen if China lost its MFN status?

_____

E3. Have you had any operation or planned investment elsewhere in China? If yes, where and how many?

_____

E4. What are the advantages and disadvantages of those locations as compared to this city?

_____

E5. To upgrade its production capability, how and in what priority can the Chinese authorities improve the following arenas?

(i) information and transportation:_____
(ii) social infrastructure (power supply):_____
(iii) legislation and regulation (customs clearance):_____
(iv) quality of labor:_____

E6. Do you think that H.K. investments are replacing Shenzhen's entrepreneurship?

_____

On the Operation in HONG KONG

A1. What are the production activities at your H.K. operation?

assembly _____
products testing and inspecting _____
packing and shipping finished products _____
product engineering design _____
marketing & distribution _____
after sales service _____
Others (Please specify):

_____

A2. What is the scale of your H.K. operation?

_____

A3. Over the past 15 years, has there been any change in (i) lot size, (ii) production layout, and (iii) inventory?

_____

B. TECHNOLOGY

B1.(I) What are the characteristics of the production technology of your company? Has there been any increase in automation?

_____

(II)

Type	Place of Origin	Age

B2. How does your company source the main technologies?
___ through your contractor
___ in-house innovation in H.K.
___ licensing
___ building up strategic alliances with foreign firms
___ buying up R&D firms in Silicon Valley, California
___ employing engineers from the PRC
___ others (Please specify)

B3. Have you increased the design expenditure over the years? How could you achieve it? Is it because of the saving from labor costs by moving to China?

B4. Are you a net buyer or seller of innovation? In what forms (patents, licenses, equipment, etc.)?

C. INDUSTRIAL LINKAGE

C1. Where do you get your component and raw material supply?

C2. Which countries are the major markets of your products? What are their relative shares?

C3. Do you face severe competition from Chinese, H.K. and/or overseas counterparts?

C4. To what extent is your competitive position affected by i) R & D efforts, ii) price, and iii) cost of production inputs?

D. EMPLOYMENT

D1. What are the categories of jobs in your H.K. operation? How many employees of each category are male or female? On a contract/temporary basis? expatriates/locals?

Category	Salary	F	M	C	T	E	L

D2. What has the change been in the employment structure at your H.K. operation over the past 15 years? Why so?

E. FUTURE PLAN

E1. What is your future plan regarding your Hong Kong operation? Why so?

E2. How does the reunification of Hong Kong with China in 1997 affect your future plan?

E3. Given political stability in this region, will you expand your operations here?

E4. Where do you have operations in countries other than China and H.K.? What are their favorable and unfavorable conditions as compared to those of H.K. and S. China?

E5. Do you think that Shenzhen will successfully take over H.K.'s production processes and compete with H.K. in electronics exports?

E6. How adequate is the support of the HK government for the electronics industry?

Appendix II: Basic Data of the Foreign Electronics Corporations in H.K.

European Companies	Products	Functions	Staff	Workers	Floor Area (sq m.)	turnover sales (US$ Mn)	branch plants	overseas employees
Thomas Components (France)	EC,CE	R	26	0	277	N/A	N/A	N/A
Siemens (Germany)	CE,IE	S,P	N/A	N/A	N/A	N/A	N/A	N/A
Telefunken (Germany)	EC,IE	R	3	0	118	N/A	Philippines	N/A
Olivetti (Italy)	C	R	150	0	91	N/A	N/A	N/A
Philips Consumer Electronics (Netherlands)	CE	P	340	330	12,545	150	Worldwide	N/A
Philips China/H.K.	CE,IE,EC	R	4,500	0	N/A	N/A	N/A	N/A
Philips LCD	LCD	P	500	N/A	N/A	N/A	N/A	N/A

CE: consumer electronics
C: computer
R: regional office
IE: industrial electronics
IC: integrated circuits
S: sales
EC: electronics components
P: production

Source: Directory of H.K. Electronics Industry, HKEA, 1994
Personal interviews and telephone conversations with manufacturers

Appendix II (contd.)

Japanese Companies	Products	Funct.	Staff	Workers	Floor Area (sq m.)	turnover sales (US$ Mn)	branch plants	overseas employees
Citizen Watch	CE	R	4	0	91	N/A	Worldwide	3,193
Tokin Electrics	CE, EC	R	30	0	227	18	Taiwan, Singapore	N/A
Toshiba	EC, IE	R	163	0	1,818	300	China, S. Korea	N/A
Sony	CE	R	170	0	345	18	N/A	1,200
Sanyo Electric	CE, EC	P	350	0	4,364	500	China	1,000
Sanyo Energy	Battery	P	210	200	5,091	35	Taiwan, Singapore	1,000
Sanyo Semiconductor	IC	R	60	0	636	1.5	China	200
Sharp	CE	R	8	0	364	280	Worldwide	N/A
Matsuzawa	CE	S	20	0	N/A	11	China	720
Fujitsu	C	S	100	0	109	5	Worldwide	50
Seiko	C	P,S	250	450	6,682	30	China	1,000
Casio Computer	CE	S	20	0	364	N/A	Malaysia, Taiwan, US	N/A
Epson	CE,IE,EC	R	140	0	2,091	204	N/A	N/A
Epson Precision	EC,IE	S,P		570	6,009	N/A	China	5,792
Mitsubishi	IC	R	120	0	1,818	3	China	N/A
Mitsubishi Electric	CE,EC	S	70	0	727	2	China	N/A
OKI	IC,C	R	29	0	545	N/A	Taiwan, Japan, Singapore	N/A
NEC	IE	S	N/A	N/A	N/A	N/A	N/A	N/A
Hitachi Asia	CE,IC	R	150	0	1,182	N/A	Singapore, Taiwan, US	N/A
Hitachi Zosen	CE	S	N/A	N/A	N/A	N/A	N/A	N/A

Appendix II (contd.)

Data / US Companies	Products	Functions	Staff	Workers	Floor Area (sq m.)	turnover sales (US$ Mn)	branch plants	overseas employees
AST Research	C	P	320	1,000	909	14	China, Taiwan, UK	N/A
AST Asia	C	S	2,000	0	125	N/A	Worldwide	N/A
Apple Computer	C	R	60	0	4,545	N/A	Asia	N/A
Ergo Electronics	C	S	60	0	1,091	N/A	Worldwide	500
Everex Systems	C	S	N/A	N/A	N/A	N/A	Worldwide	2,700
Intel	S	R	110	0	1,818	N/A	Malaysia	N/A
Hewlett-Packard	C	S	400	0	90,909	13,000	Singapore, Europe	100,000
Compaq	C	S	N/A	0	N/A	N/A	RHQ in Singapore	N/A
General Electric	CE,IE	R,P	500	300	4,090	200	Worldwide	N/A
3M	EC,IE	S,P	200	40	11,818	13	China	88,477
Siliconix	IC	R	10	0	364	15	Taiwan, US, Philippines	1,700
Tektronix	CE	R	48	7	482	N/A	N/A	N/A
National Semiconductor	IC	S	350	0	N/A	200	Philippines, Malaysia, US	24,000
Everready Batteries	Batteries	S	50	0	455	N/A	China	N/A
Texas Instruments	CE,IE,IC	S	126	0	1,818	N/A	Worldwide	N/A
Digital Equipment	C	R,S,P	N/A	N/A	14,545	14,000	Singapore, India, Taiwan,	N/A
IBM	C	R	900	0	15,455	N/A	Macau	N/A
Microsemiconductor	IC	S	100	0	N/A	N/A	Scotland	N/A

Data / US Companies	Products	Functions	Staff	Workers	Floor Area (sq m.)	turnover sales (US$ Mn)	branch plants	overseas employees
Teledyne Component	IC	P	200	100	2,277	20	Singapore	N/A
Zilog Asia	IC	R	7	0	145	N/A	Philippines, S.E. Asia	N/A
Commodore	C,IC	R	200	0	18,182	N/A	Worldwide	900
Data General	C	S	N/A	N/A	N/A	N/A	N/A	N/A

Data / Asian Companies	Products	Functions	Staff	Workers	Floor Area (sq m.)	turnover sales (US$ Mn)	branch plants	overseas employees
Mitac System (Taiwan)	C	S	20	0	136	10	N/A	400
Acer Computer (Taiwan)	C,IC	S	45	0	N/A	N/A	China	5,000
Vitelic (Taiwan)	IC	S	200	10	6,364	30	China	N/A
Samsung (S. Korea)	CE	R,S	45	0	1,818	280	N/A	N/A
Daewoo (S. Korea)	CE	S	50	30	1,091	150	N/A	N/A
Hyundai Electronics (S. Korea)	CE,IC,IE	R,S	300	0	N/A	1,100	Poland, Germany	12,000
Goldstar (S. Korea)	CE,IE	S	30	10	782	500	China	500
Goldstar H.K. (S. Korea)	CE,IE	R	35	0	N/A	20	N/A	N/A

Appendix III: Background of the Respondents

Background Firms	Position	Sex	Shareholding	Years of Employment
Motorola	Director, Management	M	No	N/A
S	Marketing officer	F	No	4
O	Owner	F	Yes	10
Sanyo HK	Chairman*	M	N/A	N/A
Huaqiang Sanyo	General* Manager	M	N/A	2
HK Legend	1. PR officer 2. Manager, Design	F M	No	N/A
Shenzhen Legend	Manager**, Production	M	No	N/A
R	Managing Director	M	No	5
A	Owner	M	Yes	25
W	Owner	M	Yes	26
N	Owner	F	Yes	10
G	Owner	M	Yes	6
E	Marketing manager	M	Yes	9
T	Owner	M	Yes	6
M	Owner	M	Yes	12
L	Production Manager	M	No	6

All the respondents are Hong Kong Chinese except:
* (Japanese), and ** (Mainland Chinese).

Appendix IV: Investment characteristics of six Hong Kong manufacturers

Data / Company	Nature of Business	Contracts in Shenzhen
A	Since 1979 as OEM supplier of audio products for U.S. customers	In 1989 established a CJV with previous subcontractor, but exercises total control of production, finance, marketing and procurement
N	Since 1978 as OEM supplier of audio products for N. American customers	In 1989 bought the previous subcontractor's land/factory and established a WFO
G	Since 1988 as OEM supplier of audio products for one H.K. trading company	In 1988 established a WFO
E	Since 1985 as OBN and OEM supplier of telephone set for N. American customers	In 1985 established an EJV with a law enforcement unit and got a license to sell in Chinese market
T	Since 1988 as OEM supplier of telephone set for N. American customers	In 1988 established a WFO and got land granted by the Education Department
L	Since 1982 as OBN and OEM supplier of CTV for N. American customers; listed company in H.K.	In 1990 bought land to establish a WFO; stopped production during Tiananmen event in 1989 and resumed production when social stability was rebuilt

Appendix IV (contd.)

Employees / Companies	Staff Chinese	H.K.	Engineers Chinese	H.K.	Direct Labor	Female Labor (%)	Labor from outside Guangdong (%)
A	10	12	10	13	1,3	80	80
N	30	5	40	15	1,5	70	80
G	0	0	7	1	400	90	80
E	70	1	10	0	1,4	85	40
T	20	0	3	0	300	90	80
L	5	10	15		1,5	85	80

Appendix IV (contd.)

Firms	Technology Deployment	Industrial Linkage	Assessment of the Region
A	Tools transferred from H.K. factory; already used for 10 years; offers a few days' on-job training to new workers	Rarely uses Chinese components	Plans to move to Dongguan
N	Tools transferred from H.K. factory; offers computer training to administrative staff and a few days' on-job training to new workers	Does not purchase Chinese components for Chinese suppliers provides no after-sales service	Already bought land in Dongguan and ready for relocation
G	Tools transferred from H.K. factory; offers a few days' on-job training to new workers	Buys only packing materials	Plans to move to Huizhou
E	Tools transferred from H.K. factory; offers two weeks' on-job training to new workers	Increases the procurement of Chinese components as required by the state in exchange for the license to sell	Stays in SEZ to preserve the partnership with the law enforcement unit, a "right connection"
T	Tools transferred from H.K. factory; offers two weeks' on-job training to new workers	Buys only packing materials	Already bought land in Dongguan for relocation, but aborted the plan due to a fortune-teller's warning of bad luck of the new site
L	Automated assembly line and highly automated testing equipment; offers two weeks' on-job training to new workers	Increases the procurement of Chinese components	Stays in SEZ since sourcing network has been established and same day commuting to H.K. is possible; plans to sell its production line to a Chinese CTV producer and moves upscale to higher value-added production

B I B L I O G R A P H Y

BIBLIOGRAPHY

Amin, S. (1974). Accumulation on a World Scale. New York: Monthly Review.

AMRC (1992). Concepts and Arguments involved in the Analysis of the Closure and Relocation of Asian TNCs within Asia. Presented at the Asian Monitor Resource Center conference, 1992.

Andors, P. (1988). Women and work. Bulletin of Concerned Asian Scholars, 20:3, 22-24.

Baranson, J. (1978) Technology and the Multinationals. Lexington, MA: Lexington Books.

Bartlett, C.A. & S.A. Ghoshal (1991). Appendix: research methodology. Managing Across Borders: The Transnational Solution. Boston, MA: Harvard Business School Press. 1992. Hong Kong.

Baum, J. (1994-5). China bond: odds improve for direct trade links. FEER, 12-29-1994 & 1-5-1995: 15-16.

Baum, J. (1995). Jiang talks strait. FEER, 2-16-1995, 14-15.

Black, C.E. (1966). The Dynamics of Modernization: A Study in Comparative History. New York: Harper & Row.

Bello, W. & S. Rosenfeld (1990). Dragons in Distress: Asia's Miracle Economies in Crisis. San Francisco, CA: The Institute for Food and Development Policy.

Blomström M. & B. Hettne (1985). Development Theory in Transition. London: Zed Book Ltd.

Browett, J. (1985). The newly industrializing countries and radical theories of development. World Development, 13:7, 789-803.

Cardoso F. & Faletto (1979). Dependency and Development in Latin America. CA: Berkeley, University of California Press.

Carlsson, J. & T.M. Shaw (1988). Newly Industrializing Countries and the Political Economy of South-South Relations. London: Macmillan.

Chai, J. (1984). Industrial cooperation between China and Hong Kong, A.J. Youngson, (ed.), China and Hong Kong: The Economic Nexus, 105-155, Oxford University Press, H.K.

Chalmers, I. (1986). International and regional integration: the political economy of the electronics industry in ASEAN, ASEAN Economic Bulletin, 8: 2, 194-205.

Chan, T.M.H.(1988). A Critical review of China's special economic zone policy--based primarily on the experience of the Shenzhen Special Economic Zone, 271-281. K.Y. Wong et al. (Eds.) Perspectives on China's Modernization: Studies on China's Open Policy and Special Economic Zones.

Chan, T.M.H. (1991a). Economic development in the Shenzhen Special Economic Zone: appendage to Hong Kong? Southeast Asian Journal of Social Science, 19: 1 & 2, 180-205.

Chan, T.M.H. (1991b). Economic development of Guangdong and its impact on Hong Kong and Taiwan, 1-16, Unpublished manuscript.

Chen, D. (1991). Annual Departmental report 1991. Commissioner for Labor. Hong Kong: Government Printer.

Chen, Q. (1988). Collections of Hong Kong History. Hong Kong: Zhong Yuan Press (In Chinese).

Chen, X.M. (1987). Magic and myth of migration: a case study of a special economic zone in China. Asia-Pacific Population Journal, 2:3, 57-76. Bangkok, Thailand: Population Division, UNESCAP.

Cheng, E. & S. Mosher (1992). Deng's distant vision. FEER, 5-14-1992, 23-26.

Cheng, E. & S. Mosher (1992). Economic strategy inspired by Hong Kong. FEER, 26-30.

Cheng, E. & S. Mosher (1992). SEZ plans to ambitious road, rail network. FEER, 30-32.

Cheng, T.Y. (1985). The Economy of Hong Kong, Hong Kong: Far East Publications.

Ching, F. (1995). Taiwan looks for loopholes. FEER, 2-2-1995, 29.

Chiu, S.W.K. (1992). The State and the Financing of Industrialization in East Asia. Sociology Dissertation, Princeton University.

Chiu, T.N. (1973). The Port of Hong Kong: A Survey of its Development, Hong Kong: Hong Kong University Press.

Clifton, T. (1994). Asia's fatal factories. Newsweek, 12-2-1994, 20-23.

Cooper, E. (1981). Woodcarvers of Hong Kong, Cambridge: Cambridge University Press.

Crane, G.T. (1990). The Political Economy of China's Special Economic Zones. New York: M.E.Sharp, Inc.

Cumings, B. (1987). The origins of development of the Northeast Asian political economy: industrial sectors, product cycles, and political consequences. C. Deyo, (ed.) The Political Economy of the New Asian Industrialism, 23-43, Ithaca, New York: Cornell University Press.

HKGID (1991). Techno-Economic and Market Research Study on Hong Kong's Electronics Industry, 1988-1989. Research conducted by Dataquest for HKGID.

Deyo, C. (1987). State and labor: modes of political exclusion in East Asian Development. In The Political Economy of the New Asian Industrialism, 182-202, Ithaca, New York: Cornell University Press.

Dwyer, D.J. & C.Y. Lai (1967). The Small Industrial Units in Hong Kong: Patterns and Policies, University of Hull Publications.

Eisold, E. (1982). Young Women Workers in Export Industries: the Case of the Semiconductor Industry in Southeast Asia. Unpublished manuscript. Geneva: ILO.

England & J. Rear (1981). Industrial Relations and Law in Hong Kong. Oxford: Oxford University Press.

Ernst, D. (1983). The Global Race in Micro-electronics: Innovation and Corporate Strategies in a Period of Crisis. Frankfurt: Campus Verlag.

Ernst, D. (1985). Automation and the world restructuring of the electronics industry: strategic implication for developing countries. World Development, 13:2, 335-53.

Ernst, D. & D. O'Conner (1992). Competing in the Electronics Industry: The Experience of Newly Industrializing Economies. OECD: Development Center.

Evans, P. (1987). Class, state, and dependence in East Asian: lessons for Latin Americanist. C. Deyo (ed.) The Political Economy of the New Asian Industrialism, 103-226, Ithaca, New York: Cornell University Press.

Friedman, A.L. (1977). Industry and labor, Class Struggle at Work and Monopoly capitalism. London: Macmillan.

Friedman, M. & R. Friedman (1981). Free to Choose, Harmondsworth: Penguin.

Friedmann, J. & Wolff, G. (1982). World city formation: an agenda for research and action. International Journal of Urban and Regional Research, 6:3, 309-343.

Friedmann, J. (1987). World cities in the Pacific Rim: outline of presentation. J. Friedmann & M. Douglass Eds.), Transnational capital and Urbanization on the Pacific Rim: Proceedings of a Conference. Center for Pacific Rim Studies, University of California, Los Angeles. Summer, 1987.

Fröbel, F. et al. (1980). The New International Division of Labor. Cambridge: Cambridge University Press.

Fujita, M. & Ishii, R. (1991). Location Behavior and Spatial Organization of Multinational Firms: A Comparative Study of Japanese, Korean, and U.S. Electronics Firms. Paper presented at the Thirty Eighth North American Regional Science Association Meetings in New Orleans, 7-11-1991, 1-85.

Fung, E. (1993). Recent development of quality management in Hong Kong, Hong Kong Computer Journal, 7/1993, 16-18.

GATT (1987). International Trade 1986-87. Geneva: GATT Secretariat.

Gereffi, G. & D.L. Wyman (1990). Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia. Princeton, NJ: Princeton University Press.

Gilpin, R. (1987). Multinational corporations and international production. The Political Economy of international Relations, 231-262. Princeton, NJ: Princeton University Press.

Goldstein, C. (1988). Threesomes for profit: electronics firms use Hong Kong to short-circuit China ventures. FEER, 10-6-1988, 62.

Goldstein, C. & K. Huus (1994). No workers' paradise: labor activists make little headway in Shenzhen. FEER, 6-16-1994, 35-36.

Gordon, D.M. (1988) The global economy: new edifice or crumbling foundations? New Left Review, 168, March/April, 24-64.

Grossman, R. (1979). Women's place in the integrated circuit. South-East Asia Chronicle, 66, 2-17.

Gu, S.T. (1984) (ed.) Shenzhen Yanjiu.

Haggard, S. (1990). Pathways from the Periphery: The Politics of Growth in the Newly Industrializing Countries. Ithaca: Cornell University Press.

Halliday, J. (1974). Hong Kong: Britain's Chinese colony. New Left Review, 87/88, 91-112.

Han, P.H. & L. Suarez-Villa (1990). International trends in electronics manufacturing and the strategy of industrialization. Rivista Internazionale Economiche e Commerciali, 37: 4-5, 381-407.

Henderson, J. (1989). The Globalization of High Tech Production: Society, Space, and Semiconductors in the restructuring of the Modern World. London: Routledge.

Hill, R.C. (1987). Factory and company town: the changing division of labor in the international automobile industry. Henderson, J. & M. Castells (Eds.), Global restructuring and Territorial Development, 18-38. London: Sage.

Hill, R.C. (1990). Division of labor in global manufacturing: contrasting tendencies in the world automobile industry. L. Valladares, & E. Preteceille (Eds.), Reestructuracao Urbana: Tendencias e Desafios. Sao Paulo, Brazil: Editora Nobel.

Hill, R.C. & Y.J. Lee (1994). Japanese multinationals and East Asian Development: the case of the automobile industry. L. Sklair (ed.) Capitalism and Development. London: Routledge.

Hiraguchi, K. (1989). Trends in Electronics and Electric Industries in Southeast Asia. Corporate Planning Division, Toshiba Corporation.

HKFI (1992). Hong Kong Investment in Pearl River Delta. Federation of Hong Kong Industries.

HKGID (1993a). 1993 Survey of Overseas Investment in Hong Kong's Manufacturing Industries. Hong Kong Government Industry Department.

HKGID (1993b). Hong Kong's Industries 1993.

HKGID (1993c). The 1993 Survey of Regional Representation by Overseas Companies in Hong Kong.

HKTDC (1984). Hong Kong's Personal Computer Industry. Hong Kong Trade Development Council.

HKTDC (1990). Hong Kong's Electronics Industry. Research Department.

HKTDC (1991a). OEM Business with Japan's Electronics Industry. Research Department. April.

HKTDC (1991b). Recent Investment Environments of Guangdong, Fujian and Hainan. Research Department.

HKTDC (1993). Market Profile of Asian and Chinese Provinces/ Municipalities/ Cities. Research Dept.

HKTDC (1994). Hong Kong Electronic Industry: Industry and Product Profile. Research Department. 6-2-1994.

Ho, K.C. (1991). Studying the City in the New International Division of Labor. Working Papers, 107, 1-43. Department of Sociology, National University of Singapore, Singapore.

Ho, Y.P. (1992). Trade, Industrial Restructuring and Development in Hong Kong, 175-180. Honolulu: University of Hawaii Press.

Holloway, N. (1995). Paradise lost: Friedman predicts China will scrap Hong Kong dollar. FEER, 2-23-1995, 55.

Hoon, S.J. (1994). Soul Searching: South Korea opens border to business. FEER, 11-17-1994, 86.

Huus, K. (1994). Gridlock, Anyone? FEER, 11-10-1994, 56-58.

Hymer, S. (1971). The multinational corporation and the law of uneven development. J.W. Bhagwatti (ed.) Economics and World Order, 113-140. New York: MacMillan.

Ingham, G. (1984). Capitalism Divided? The City and Industry in British Social Development. London: Macmillan.

Jao, Y.C. (1974). Banking and Currency in Hong Kong. London: Macmillan.

Jao, Y.C. (1983). The financial structure, D. Lethbridge (ed.), Hong Kong: the Business Environment, Oxford: Oxford University Press.

Jao, Y.C. & C.K. Leung (1986). China's Special Economic Zones: Policies, Problems and Prospects. 226-246. Hong Kong: Oxford University Press.

Joo, C.B. (1992) Situation and Characteristics of Korean Capital Investment in Asia. Paper presented at Asian Monitor Resource Center conference, Hong Kong.

Johnson, C. (1987). Political institutions and economic performance: the government-business relationship in Japan, South Korea, and Taiwan. C. Deyo, (ed.) The Political Economy of the New Asian Industrialism, 136-164, Ithaca, New York: Cornell University Press.

Jones, R., R. King & M. Klein (1992). The Chinese Economic Area: Economic Integration without a Free Trade Agreement. Economic Department, Working Papers, #124, OECD, Paris.

Kao, J. (1993). The worldwide web of Chinese business. Harvard Business Review, March-April, 24-36.

Katz, N. & D.S. Kemnitzer (1983). Fast forward: the internationalization of Silicon Valley. C. Jun & M.P. Fernandez-Kelly (Eds.), Women, Men, and the International Division of Labor. 332-345. NY, Albany: State University of New York Press.

Kaye, L. (1995). Fire when ready: problem is, Beijing doesn't have the nerve. FEER, 2-23-1995, 50-54.

Khan, K.M. (1986). Multinationals from the South: emergence, patterns and issues, in Khan, K.M. (ed.), Multinationals from the South, proceedings of an international conference organized by the German Overseas Institute, Nov. 6-8, 1985, Hamburg, Germany, 1-14.

King, A.Y.C. (1974). The role of small factories in economic development: the case of Hong Kong. In T.B. Lin et al.,Hong Kong: Economic, Social and Political Studies in Development, M.E. Sharp, White Plains.

Kleinberg, R. (1990a). Shenzhen's Relations with the National Economy, China's "Opening" to the Outside World: The Experiment with Foreign Capitalism, 71-101. Boulder: Western Press.

Kleinberg, R. (1990b). Economic results of foreign investment policy, China's "Opening" to the Outside World: The Experiment with Foreign Capitalism, 221-245, Boulder: Western Press.

Kojima, S. (1987). Japanese Investment in China. China Newsletter, 69, 14-22.

Koo, H. (1987). The interplay of state, social class, and the world system in East Asian development: the cases of South Korea and Taiwan. C. Deyo, (ed.) The Political Economy of the New Asian Industrialism, 165-81, Ithaca, New York: Cornell University Press.

Kumar, K. (1981). Multinationals from developing countries. Canada: D.C. Heath and Company.

Lall, S. (Ed.) (1983). The New Multinationals: The Spread of Third World Enterprises. London: Wiley.

Lethbridge, H. (1980). The Social Structure: Some Observations. Unpublished M. Soc. Sc. thesis, University of Hong Kong.

Leung, W.Y. (1988). Smashing the Iron Rice Pot: Workers and Unions in China's Market Socialism. Hong Kong: Asian Monitor Resource Center.

Lin, T.B. (ed.) (1980). Manufacturing Exports and Employment in Hong Kong. Hong Kong: The Chinese University Press.

Lin, T.B. & Y.P. Ho (1980). Export-Oriented Growth and Industrial Diversification in Hong Kong, Hong Kong: Economic Research Center, the Chinese University of Hong Kong.

Lin, T.B. & C. Tuan (1989). Trade, protectionism, and industrial adjustment: the case of Hong Kong's consumer electronics industry. L.H. Tan & S.Y. Chia (Eds.), Trade, Protectionism, and Industrial Adjustment in Consumer Electronics: Asian Responses to North America, 112-147. Singapore: Institute of Southeast Asian Studies.

Liu, P.K., R.Y.C. Wong & Y.W. Sung (eds.) (1992). China's Economic Reform and Development Strategy of PRD. Nanyang Commercial Bank Ltd.

Liu, T.L. & S. Chiu (1994). A tale of two industries: the restructuring of H.K.'s garment-making and electronics industries. Environment and Planning A, 26:1, Jan., 53-70.

Louise do Rosario (1994). Port of convenience: Taipei to keep using Hong Kong as China gateway. FEER, 9-1-1994, 22-23.

Louise do Rosario (1987). Hong Kong surface, China core: Shenzhen's future lies in commercial services, not industry. FEER, 10-1-1987, 104-5.

Matthews, J. (1960). The industrial bank report--a criticism. FEER, 8-25-1960, 435.

Miners, N. (1987). Hong Kong Under Imperial Rule, 1921-1941. Hong Kong: Oxford University Press.

Mody, A. & D. Wheeler (1990). The NIC challenge in advanced electronics. Automation and World Competition, 74-127. NY: St. Martin's Press.

Ng, I. W.C. (1992). Flexible Production and the Creation of Competitive Advantage in an Asian Newly Industrializing Economy. Geography Dissertation, CA: UCLA.

Ohame, K. (1985). Triad Power: The Coming Shape of Global Competition. London: Harper Collins.

Oborne, M. (1986). China's Special Economic Zones. Paris: OECD Development Center.

Owen, N. (1971). Economic policy in Hong Kong. K. Hopkins (ed.), Hong Kong: the Industrial Colony, Oxford: Oxford University Press.

Panglaykim, J. (1979). Multinational Corporations in ASEAN/South Korea/Hong Kong: A Descriptive Picture. Paper presented to Seminar on Third World Multinationals at East West Cultural Learning Institute, Honolulu.

Parsonage, J. (1992). Southeast Asia's 'Growth Triangle': a subregional response to global transformation. International Journal of Urban and Regional Research, 16: 2, 307-317.

Piore, M, and Sabel, C. (1984). The Second Industrial Divide: Possibilities and Prosperity. New York: Basic Books.

Porter, M. (1980). Competitive Strategy: Techniques for Analyzing Industries and Competitors, New York: Free Press.

Rabushka, A. (1976). Value for Money: the Hong Kong Budgetary Process. Stanford, California: Hoover Institution Press.

Rada, J. (1980), The Impact of Microelectronics: A Tentative Appraisal of Information Technology. Geneva: ILO.

Redding, S.G. (1990). The Spirit of Chinese Capitalism. Berlin: De Gruyter.

Rimmer, P.J. (1992). Hong Kong's Future as a Regional Transport Hub. Strategic and Defense Studies Center, Research School of Pacific Studies, the A.N.U., Canberra, Australia.

Rosario, L. (1987). Hong Kong surface, China core. FEER, 10-1-1987, 104-105.

Rosario, L (1995). Risky business: does China-style disorder lie in store? FEER, 1-26-1995, 20-21.

Rostow, W.W. (1971). Stages of Economic Growth. 2nd. ed. New York: Cambridge University Press.

Sabri-Abdalla, I. (1980). Third World multinationals for collective self-reliance, H. Khadija (ed.), Dialogue for a New Order", New York: Pergamon Press.

San, G. (1990). The Status and an Evaluation of the Electronics Industry in Taiwan. Technical Papers, 29, Paris: OECD Development Center.

Sanderson, S.W. (et al.) (1989). Impacts of computer-aided manufacturing on offshore assembly and future manufacturing locations. Regional Studies, 21:2, 131-142.

Sayer, A. (1986). New development in manufacturing: the just-in-time system, Capital and Class, 30, 43-72.

Schiffer, J.R. (1992). State policy and economic growth: a note on the H.K. model. International Journal of Urban Studies, 15:4, 180-196.

Scott, A. (1986). The semiconductor industry in South-East Asia: organization, location and the international division of labor. Regional Studies, 21:2, 143-160.

Schönberger, E. (1986). Technological and organizational change in automobile production: spatial implications. Regional Studies, 21:2, 199-214.

Sender, H. (1995a). You First: Japan's big car markers remain wary of China. FEER, 1-26-1995, 45-46.

Sender, H. (1995b). Pilgrim's Progress. FEER, 2-9-1995, 57-58.

Silverman (1995). Dollar debate, FEER, 3-2-1995, p.63.

Sit, V.F.S. (ed.) (1984). Resources and development of the Pearl River Delta, Hong Kong, Wide Angle Press (in Chinese).

Sit, V.F.S. (ed.) (1985). Hong Kong industries: prospects after 1997. in Y.C. Jao, C.K. Leung, P. Wesley-Smith and Sit, V.S.F. (1989). Hong Kong's new industrial partnership with the Pearl River Delta. Asian Geographer, 8: 1&2, 103-15.

Sit, V.S.F. (1988). Changes in the Industrial Structure and the Role of Small and Medium Industries in Asian Countries: The Case of Hong Kong. Tokyo: Institute of Developing Economies

Sklair, L. (1987). Development effects of transnational capital: the case of China and Mexico. J. Friedmann & M. Douglass (Eds.), Transnational Capital and Urbanization in the Pacific Rim: Proceedings of a Conference, 1-22. UCLA: Center for Pacific Rim Studies.

Sklair, L. (1991). Problems of socialist development: the significance of Shenzhen special economic zone for China's open door development strategy, International Journal of Urban and Regional Research, 15:4, 197-215.

Smart, J. & A. Smart (1991). Personal relations and divergent economies: a case study of Hong Kong investment in South China, International Journal of Urban and regional Research, 15:4, 216-233.

So, A. (1985). The economic success of Hong Kong: insights from a world system perspective. Sociology Perspectives, 19:2, 241-258.

Sung, Y.W. (1984). The Role of Government in the Future Industrial Development of Hong Kong. Paper presented at the conference on Hong Kong and 1997, Center for Asian Studies, University of Hong Kong, December 1984.

Sung, Y.W. (1991). The Key to China's Open Door Policy. Cambridge: Cambridge University Press.

Szezepanik, E. (1958). The Economic Growth of Hong Kong, Oxford: Oxford University Press.

Talyor, J. (1974). "Neo-marxism and underdevelopment--A sociological phantasy," Journal of Contemporary Asia. 4, 5-23.

TBGS, 1990. Moving into the 21st Century: The White Paper on Transport Policy in Hong Kong, Hong Kong, transport Branch, Government Secretariat.

Tennant, D. (1990). Motorola burrows into Hong Kong. Computerworld, 12-12-90:2.

Thoburn, J.T., H.M. Chau, and S.H. Tsang (1990). Foreign Investment in China Under the Open Policy: The Experience of Hong Kong Companies. Britain: Aenaeum Press Ltd.

Thornton, E. (1994). Opportunity knocks: Dalian has become a haven for Japanese companies. FEER, 12-8-1994, 56-57.

Thornton, E. (1995). Hard Drive: Taiwan aims for the semiconductor big leagues. FEER, 2-9-1995, 56-57.

Tiglao, R. (1995). Ahead of the curve: Malaysian investors stake their bets on the Philippines. FEER, 2-2-1995, 38-40.

Todd, D. (1990). The NIC challenge. The World Electronics Industry. London: Routledge.

Tung, F. (1993). Building telecommunication networks to PRC: infrastructure and services. Hong Kong Computer Journal, March, 20-21.

Turner, H.A. (1980). The Last Colony: But Whose? Cambridge: Cambridge University Press.

UNCTC (1983). Transnational Corporations in World Development: Third Survey (ST/CTC/46), New York.

UNCTC (1987). Transnational Corporations and the Electronics Industries of ASEAN Economies. New York: United Nations.

UNCTC (1991a). World Investment Report: The Triad in Foreign Direct Investment. New York: United Nations.

UNCTC (1991b). University Curriculum on Transnational Corporations. Vol. 1 Economic Development. New York: United Nations.

UNCTC (1992). World Investment Report: Transnational Corporations as Engines of Growth. New York: United Nations.

UN-ESCAP (1993). Guidebook on Trading with the People's Republic of China, 262-265. Bangkok, Thailand: UN-ESCAP.

Vogel, E. (1989). One Step Ahead in China: Guangdong Under Reform. Cambridge, Mass: Harvard University Press.

Wallerstein, I. (1974). The Modern World-System: capitalist Agriculture and the Origins of the World-capitalist economy in the Sixteenth Century (2 vols). New York: Academic Press.

Wallerstein, I. (1979). The Capitalist World-Economy. Cambridge: Cambridge University Press.

Warr P.G. (1992). Export Processing Zones in East and Southeast Asia and China's Special Economic Zones. Foreign Investment, Trade and Economic Cooperation in the Asian and Pacific Region. United Nations: Economic and Social Commission for Asia and the Pacific, Bangkok, Thailand.

Watanabe, M. (1993). Some Thoughts on technology transfer. JETRO China Newsletter 103, March/April, 7-12.

Watson, R. (et al.) (1995). The last days of a dynasty? When Deng dies, his bland heirs may lose the mandate of heaven. FEER, 1-30-95, 37-38.

Wehrfritz, G. (1995). Is there life in the old party? FEER, 1-23-1995, 36-37.

Wells, L.J. Jr. (1985), Third World Multinationals: the Rise of Foreign Investment from Developing Countries. Cambridge, MA: MIT Press.

Wells, L.T. Jr. (1986). "New and old multinationals: competitors or partners?" K.M. Khan (ed.), Multinationals from the South, proceedings of an International conference organized by the German Overseas Institute, Nov. 6-8, 1985, Hamburg, Germany.

Wells, L.T. (1992). Conflict or Indifference: US Multinationals in a World of Regional Trading Blocs. Technical Papers, OECD Development Center, Paris.

Wilson, T. (1990). Motorola boosts IC assembly in Japan. Computerworld, 11-29-94, 2.

Wilson, T. (1991). National Semiconductor expands local base. Computerworld, 4-18-91, 3

Wong, K.Y. & K. Chu (Ed.) (1985). Modernization in China: The Case of the Shenzhen Special Economic Zone. Oxford University Press.

Wong, K.Y., C.C. Lau & B.C. Li (ed.) (1988). Perspectives on China's Modernization: Studies in China's Open Door Policy and Special Economic Zones. Hong Kong: Center of Contemporary Asian Studies, The Chinese University of Hong Kong.

Woronoff, J. (1980). Hong Kong: Capitalist Paradise. Hong Kong: Heinemann Asia.

Worsley, P. (1990). Models of the modern world-system. M. Featherstone (ed.), Global Culture: Nationalism, Globalization and Modernity. London: Sage, 83-96.

Wu, C.L. (1978). The non-fixed assets of the Hong Kong's government. Hong Kong Economic Paper, 12.

Wu, C.L. (1992). A high Land Price Policy in Hong Kong? A Preliminary Study Discussion Paper Series, 7-25. Department of Economics, University of Hong Kong.

Wu, W.M. (1990). China's Shenzhen Special Economic Zone--A Social Benefit-cost Analysis. Dissertation, Department of Management, Honolulu: University of Hawaii.

Yager, W.F. (1991). International Technology Transfer to Chinese Society: Comparative Studies in H.K., Singapore and China. Dissertation, Department of Management, University of Oregon. UMI Dissertation Information Service.

Yamada, B. (1990). Internationalization Strategies of Japanese Electronics Companies: Implications for Asian Newly Industrializing Economies. Technical Papers, 28. Paris: OECD.

Yang, M. (1988). The Modernity of Power in the Chinese Socialist Order. Cultural Anthropology 3, 408-27.

Young, A. (1989). Hong Kong and the art of landing on one's feet: A Case Study if a Structurally Flexible Economy. Dissertation in Law and Diplomacy. Tufts University. UMI.

Zhang, J. (1993). Problems in direct investment in China. JETRO China Newsletter, 103. March/April, 13-21.

Zielenziger, M. (1994). Without you I'm nothing: New report say China propels Pacific Rim growth. FEER, 6-23-1994.

Magazines/Newspapers published in Hong Kong, China or Taiwan

(In English)
Asian Electronics
Electronics
Far East Economic Review
Hong Kong Computer Journal
Hong Kong Industrialist
MEI Electronics
South China Morning Post
Hong Kong Standard

(In Chinese)
Capital
China Economic Review
China-Hong Kong Economic Monthly
Contemporary Electronics
Finance Time
Hong Kong Economic Journal
Hong Kong Economic Daily
Hong Kong News Daily
Hong Kong and Macau Economic Digest
International Economics and Trade
Ming Pao
Ming Pao Monthly
The Nineties
People (Monthly)
Shenzhen SEZ Daily
Special Economic Zone Economics
Wide Angle Press

Directories

Directory of China Electronics Industry (1994)

Directory of Electronics Enterprises in China (1994)

Directory of Foreign Investment Enterprises in Shenzhen (1990)

Directory of Hong Kong Industry and Commerce (1993)

Directory of Investment in Guangdong, the Commission of Foreign Economic Relations and Trade of Guangdong Province, 6/1993.

Guangdong Foreign Investment Enterprises Directory (1993)

Hong Kong Electronics Industry (1994)

Shenzhen Yellow Pages: Commercial/industrial Directory (1993)

Yearbooks

Shenzhen Statistics Yearbook
Shenzhen SEZ Yearbook
Hong Kong Yearbook

Brochures

The Challenge of Hong Kong Plus (1991). Wharf (Holdings) Ltd.

Hong Kong 21: A 10 Year Vision and Agenda for H.K.'s Economy (1993). Business Professionals Federation of Hong Kong.

Motorola completes construction of facility (phase 1) in Tianjin, China (1993). News Release, Motorola SC Products Sector Asia Pacific Division, 11-11-1993.

Motorola: Trying to gain a firm foothold in the Hong Kong market (1992). Hong Kong I.T. Focus, March, 1-2, Industry Development Committee, H.K.

Motorola SCs Hong Kong Ltd. (1994) Motorola SC Products Sector Asia Pacific Group.

Shenzhen Industrial Investment Projects 1992, Shenzhen Economic Development Bureau.