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Industrial Transition and Population in Asia

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FOREWORD

Humankind has reached a major turning point in its history. A fundamental issue of particular importance today is how developing countries, which account for the majority of the world's population, can moderate their extremely high population growth, achieve economic development and attain a high standard of living.

We have focused our attention on Asia, which contains the majority of the population of developing countries, and attempted to analyze the current situation and future perspectives, as related to demographic transition and industrial transition. We have particularly selected East Asia and ASEAN nations in order to make interdisciplinary, international research by many specialists, in view of the remarkable achievement of population control and economic development they have attained and the great hopes being placed in them for the vitalization of the world economy.

One of the major contributions of this comprehensive project is that it has indicated not only the possibilities but also lessons for development through the mutual and complementary effects of demographic and industrial transition, and that it has clearly demonstrated the existence of a ripple effect of pioneering experiences of certain countries in this region.

I believe that the research conducted by leading Japanese specialists and the cooperation of distinguished scholars overseas attest to the excellent value of this report. I would like to warmly thank the following foreign scholars for their participation in research and the papers they presented:

Dr. Lee-Jay Cho, Vice President for Program Development, East-West Center,Hawaii

Dr. Won Bae Kim, Research Associate, Program on Population, East-West Center,Hawaii

Prof. Wang Shengjin, Chairman, Department of Sociology, Director of Population Research Institute, Jilin University, China

Finally, allow me to express my sincere thanks to the Japan Shipbuilding Industry Foundation (Ryoichi Sasakawa, Chairman) and the United Nations Population Fund (Executive Director, Dr. Nafis Sadik) for their immense support on the preparation of this report.

March, 1993
Fukusaburo Maeda
Chairman
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Contents

Chapter One

INDUSTRIAL TRANSITION AND DEMOGRAPHIC TRANSITION

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1 Diversification of Demographic Transition Theories - The Break from Economic-oriented Theories -

Since before World War II. many demographers and sociologists had attempted to systematize the relationship between demographic transition and modernization (industrialization, urbanization, employment system, and increased educational level) in the West since the Industrial Revolution. These attempts consisted of frameworks of highly systematic interpretations in the form of demographic transition theories or hypotheses. However, such theories and hypotheses were characterized by the fact that they views an ordered transition from high fertility and high mortality to low fertility and mortality as a byproduct of modernization centered on industrialization. The present writer believes that these demographic transition theories can be characterized as vertical causal theories centering primarily on industrialization based on Western historical experiences.

In other words, if economic and social modernization centered around industrialization had not taken place, demographic transition would also not have occurred. In addition, the mutual interaction of industrial transition and demographic transition emphasized by many theorists today was not found in Western demographic transition theories before the 1960s.

The drastic demographic transition achieved by Japan after World War II and the appearance of population policy argument with the rapid increases in populations in developing countries, which account for the majority of the world's population, aroused the strong interests not only of specialists worldwide but also of United Nations agencies and other international agencies, which began to reexamine the Western demographic transition theories.

Some of the major issues were: (1) whether or not Western type demographic transition theories could be applied to developing countries; (2) the significance of the demographic transition experience of Japan, an Asian country outside of the Western cultural sphere; and (3) the role and position in demographic transition theories of population policies for restricting population growth, policies which did not exist in the history of demographic transition in the West. Not only from the practical standpoint of policy, but also theoretical standpoint, these are evidently important, urgent issues.

The active attempts of specialists to reexamine demographic transition and industrial transition have given rise to three directions, in what they may be called diversification in a word of demographic transition theories. The first is the view that Japan's demographic transition has the role of a bridge linking North and South. The second is the concept that population policies centering around family planning can play the role of a motive force for industrial transition. This view is in opposition to the demographic transition theory focusing on industrial transition, that is the vertical theory that industrial transition brings about demo-

graphic transition. The third is the parallel theory of industrial transition and demographic transition. The first view is a spread theory in the sense that demographic transition in a certain nation or region spreads to other nations or regions.

These three views are not necessarily independent processes, but processes which in reality overlap. Furthermore, there is also a fourth approach which attempts to classify all nations in the world according to stages of demographic transition. Demographic transition is of itself a theory of stages. The fourth is a purely formal demographic method which divides demographic transition into stages according to the level of the total fertility rate (TFR) (UN: 1991). Thus, this is a view which does not consider the stage of economic development or the existence of population policies (family planning policies).

2 The North/South Bridge - Demographic Transition in Japan

The fact that the birth and death rates in Japan dropped by one half and reached the level of advanced Western nations over a period of only one decade following World War II was a great surprise in Western scholarly circles and the first shock which led to a reexamination of demographic transition. It demonstrated that demographic transition was not a phenomenon unique to Western culture societies but could also be applied to societies of other cultures. However, at that time it was common to view Japan's experience as exceptional or as being virtually equivalent to the experience of the West (Davis: 1963, Taeuber: 1960).

In the Japanese experience, demographic transition was slow in spite of the progression of industrial transition before the war, but the fact that demographic transition was surely proceeding was taken as a basis for saying that demographic transition in Japan was similar or of the same nature as the Western experience (Minoru Tachi: 1967). However, although in reality the rapid post-war demographic transition and fertility transition in particular was due to the war, this was caused by fertility control in a state of extreme poverty. The second characteristic is that demographic transition was achieved before economic reconstruction and economic growth began. In other words, it should be noted that demographic transition was not generated over a long period time along with economic growth as was the case in the Western experience, and though the period between demographic transition and industrial transition in Japan was short, demographic transition was achieved within the economic poverty prior to industrial transition. It is a matter of some controversy whether or not there were absolutely no governmental policies for curbing the birth rate as in the West at the time of demographic transition and in particular fertility transition in Japan, or whether or not there were population policies like the ones seen in developing countries which rapidly came to be active. In the case of Japan, we can say that the government did not necessarily carry out poli-

cies to actively curb the population, but in response to the Japanese people's rapidly growing tendency to conduct abortions at their own will, as early as 1948 the government established the Eugenic Protection Act, and in 1949 instituted a policy which in effect liberalized artificial termination of pregnancy. Thus, because of the fact that the government implemented such policies at the time of a baby boom and actively promoted family planning, we can say that governmental population policies did indeed exist, even not in explicit terms.

The experiences of poverty, abortion, population policies and demographic transition in postwar Japan has played the role of an advanced experience for the subsequent demographic transition in developing nations of Asia. In fact, demographic transition proceeded rapidly in such neighboring countries and territories as Hong Kong, Singapore, Taiwan and Korea only a little time after demographic transition was completed in Japan. The present writer has called this process "demographic transition spread theory" (Kuroda, 1968).

Rather than being similar to the Western experience of demographic transition, Japan's experience of demographic transition presented Asian characteristics and characteristics of a developing nation. As such, it is important that efforts be made to actively study this experience for demographic transition in accordance with economic, social and cultural characteristics of the various countries to be achieved quickly, and consequently contribute directly to industrial transition. We hope that the Japanese government and specialists will develop new interest in demographic transition, an important field for Japan's international cooperation. This is truly Japan's international role and responsibility as a bridge between North and South.

3 The Multi-stage Structure of Demographic Transition

Demographic transition in Japan, achieved at an extraordinary speed in the ten years spanning 1947 to 1957, soon spread to East Asian and Southeast Asian nations. If we look at the time when demographic transition began entering its final stage, this happened in 1947 in Japan, 14 years later or 1961 in Hong Kong, 17 years later or 1964 in Singapore, 22 years later or 1969 in China. It is extremely interesting to note that the birth rates in each these countries and territories were reduced by half in a period of 10 years, exactly the same as Japan (Ogawa : 1989, : Kuroda : 1990).

We can say that demographic transition has been completed in Singapore and Hong Kong, and is proceeded towards completion in other East Asian and ASEAN countries, which are in different stages of demographic transition. These countries are in different stages of demographic transition as a result of their different economic, social, and cultural conditions and their efforts through population policies, indicating a multi-stage structure.

Table 1 shows this multi-stage structure according to the demographic transition index.

Table 2 compares the demographic transition index and also the per capita national income of Asian countries as one index reflecting the stage of economic development.

In East Asia, Japan, Hong Kong, Taiwan and Korea have all completed their fertility transition, and the TFR in these countries and territories are below the replacement level. The average life expectancy is also above 70 years for each of them. Thus, their demographic transition index (DTI) is 1.00 or near 1.00 for all but Korea. The gap between the DTI of Taiwan and Korea is due to the difference in their average life expectancies. The DTI is high in all of East Asia aside from Mongolia (0.5), showing that all countries and territories are nearing completion of demographic transition.

However, there is a substantial gap in the DTIs among South East Asian countries. It is interesting that the process of demographic transition shows an orderly progression from the Philippines at the bottom (0.63) to Singapore at the top (0.90). This clearly defined multi-stage structure deserves attention.

We can expect that this multi-stage structure of demographic transition along with the corresponding multi-stage structure of different levels of economic and social development could to contribute to the acceleration of demographic transition and industrial transition with mutually complementing function in the future. This point will be discussed further on.

Table 2 shows the demographic transition index and the per capita national income as one index of economic development. Though it is not possible to demonstrate the relationship between the two statistically due to small samples, we can see that there appears to be a relationship between high demographic transition indices and high per capita income levels. This suggests that the relationship corresponds to the Western experience of demographic transition - in other words, as the economy develops, the national living standard increases, and as a result the fertility and mortality rates decrease. However, Table 2 suggests that there is also another tendency. Take China as an example. Though China has a demographic transition index of near 0.9, its per capita income is only US$370, just 1.5% of Japan's per capita income and 5% of Taiwan's per capita income. Furthermore, despite the fact that China's per capita income is relatively near (2/3) that of Indonesia, China has a demographic transition index of 0.9, whereas Indonesia's demographic transition index is only 77% that of China. Also, whereas Indonesia's per capita income ($570) is lower than that of the Philippines ($730), Indonesia has a higher demographic transition index. If we consider statistical error, it is difficult to reach clear conclusions in cases where the gap between these two indices is not very pronounced such as in the case of Indonesia and the Philippines.

However, in any case, as shown by the Western experience, we cannot deny that there is a tendency for demographic transition to accelerate where economic development or industrial transition is marked. Another important fact, however is that demographic transition appears to be possible even before industrial transition has progressed, as is the case in China.

There is the possibility that with strong, appropriate policies for controlling fertility - in other words family planning policies and programs - fertility transition, the main current of demographic transition, can be achieved without significant industrial transition or even before industrial transition.

Herein are important theoretical and policy issues of the experience of fertility transition in Japan, a country lying outside the Western cultural sphere, as well as the possibilities of demographic transition in developing countries.

4 The Search for the Independent Effects of Family Planning

In developing countries which display generally an extremely high population growth rate and low development, it is a matter of first priority to reduce this high population growth rate. However, it is not easy to spread family planning practice, the most important method of reducing fertility, among the general public. For not only the developing countries themselves but also for the United Nations and developed countries which are attempting to spread family planning, there is widespread doubt about whether or not spreading family planning among the general population and reducing fertility are possible under conditions of lagging economic and social development. This is a completely new experience never before met in the history of Western demographic transition.

The joint practical research of Mauldin and Berelson (Mauldin and Berelson, 1978) is a noteworthy analysis of this issue. This research was a comparative study which established two indicators, a developmental index and a family planning program strength index, and compared the rate of decrease of the crude birth rate for the period 1965 - 1980. We can sum up the results as follows (Ato, 1990):

(1) The higher the level of development, the greater the decrease in the birth rate.

(2) For countries with the same level of development, the stronger the family planning programs, the greater the decrease in the birth rate.

(3) However, there were no countries with very low levels of development conducting family planning programs. Furthermore, many multiple-variable analyses based on country data including such developmental and family planning program indices are being conducted, and it has become clear that the family planning program index has a fertility-reducing effect independent of the developmental index.

We can assume that regardless of the economic and social conditions, family planning programs will eventually have some effect, whether this effect may be quick or late and large or small. The issue here is whether or not it is possible for countries to be able to reduce fertility without the type of development experienced by developed countries. With their

ideas that "it is impossible to reduce fertility without development" and "development is the best method of family planning", argued by economic developmentalists, family planning programs are a waste of money. However, it goes without saying that the progress of development itself plays a role in stimulating fertility transition, as in the Western experience in the past. What is important is whether or not family planning policies for curbing fertility have an effect independent of the degree of development.

The Mauldin/Berelson corroborates that such an independent effect does exist. Here let us discuss briefly this effect in the Asian region.

First is the example of China, as already referred. Considering the economic and social development levels and the reduction of fertility in the separate Chinese provinces, the present writer has conducted a comparison of fertility in Sichuan where development is lagging and the three northeastern provinces where development is high. The fertility in Sichuan, a province in which such factors as industrialization, urbanization and literacy are far behind, is lower than in the three northeastern provinces, and the speed of fertility reduction is due to the strong efforts at the promotion and spread of family planning programs in the province (Kuroda, 1990; Freedman, 1983, 1988). The case of India is another evidence of the fact that the family planning program has independent effects on curbing the birth rate as seen from the data of the different provinces within a country (King, 1974). It is a well-known fact that the Indian state of Kerala has relatively low economic and social development, but a high rate of family planning practice and a major reduction in the fertility through late marriages among others (Rajan, 1989).

5 New Dimensions in Demographic Transition and Industrial Transition

The fact that there is a need to include population policies as an integral part of development policies has been stressed at United Nations conferences and official documents, but the first who has given clear evidence of the mutual complementing character of demographic transition and industrial transition or the spreading effect of the existence of multi-stages of demographic transition is Lee-Jay Cho, Vice President of the East-West Center, Hawaii (Cho, 1985.).

In particular, Cho, focusing on East Asia, established an model of the mutual interaction of demographic transition and industrial transition not only between nations but also within countries. This can be summed up as follows:

First, the existence of a diversity in the stages of economic development makes an advantageous mutual interaction possible.

Second, geographical proximity.

Third, the existence of cultural affinity - for example, values such as stress on education, a spirit of industriousness and thrift, and a spirit of competition for advancement in life as seen in Confucian cultures.

A major shortcoming of demographic transition theories up to now has been that they have ignored the role of cultural factors which promote a reduction in fertility or inversely obstruct it. As was clear from the Western experience of demographic transition, it is true that economic and social variables are conditions for the reduction of the fertility, but the unilateral view which only stresses the influence of economic and social development on demographic dynamics is not acceptable today (APDA, 1989).

In addition to geographic and cultural factors, we can naturally expect an increase in mutual dependency and international population movement from the trade viewpoint to generate a mutual influence on the experiences of neighboring countries. Such demographic elements as reproductive behavior are also no doubt included in such international activities (Cho and Martin, 1990). For example, when the rate of growth of the population of a certain country decreases and economic growth accelerates, the country begins to take note of neighboring countries which may have a low level of demographic transition and industrial transition but an abundant supply of low-wage labor and opportunities for favorable investments. In this way, various changes take place in the developing country which receives the investments, changes which affect demographic transition both directly and indirectly. In both agriculture and industry, the influx of capital results in increased marginal products of labor, and employment and labor productivity begin to rise. Employment opportunities for women increase and their salaries also increase. As the opportunities for women to work outside the family and their incomes increase, the opportunity cost of bearing and raising children also increases. On the labor market, as the demand for highly specialized technicians increases, the expectations of parents with regard to the education of their children become stronger, and investments in education increase. The quality of children becomes much more important than the quantity of children. Thus, along with the expectations for higher levels of education for children, the birth rate begins to drop. The mutual interaction between countries spreads to other countries, producing ripple effects (Kim, 1992).

In this way, we can hold expectations in the existence in Asia of a multi-stage demographic and economic structure, as seen in the diversity of demographic transition and the various stages of economic development, as a sign of future population and economic changes in countries still in a lagging stage of demographic and industrial transition.

6 Demographic Behavior and Economic Performance

Birth and death are some of the most fundamental aspects of human behavior, called demographic reproductive behavior. Economic activities are a basic action for the existence of human beings, and the other aspect of living actions for human life. As long as these two fundamental types of behavior are each integral parts, they will inexorably mutually interact, and a balance is needed between the two.

It is clear that demographic and industrial transition, the macro expressions of these two types of behavior, mutually interact and have mutually complementing functions. However, because the process of demographic transition is by no means simple, in the past it was difficult to understand that this interaction is not unilateral but bilateral.

Another important point is the fact that demographic transition and industrial transition are not only mutually interacting and mutual complementarity, but have the effect of spreading transversely from country to country as well as from region to region within a country. This can be seen particularly in the ripple effect in the case of the Japanese experience spreading to East Asia and ASEAN countries. This consists in the spread of such ideas, concepts and values as family planning and the control of fertility. This is also called "transition of ideation" (Freedman, 1991, Kuroda, 1992).

This spread of ideation is noteworthy for the important fact that it can occur easily and rapidly between areas with the same or similar traditional cultures, or which are historically or geographically proximate. However, we can also foresee that the effects of policies and other factors will spread to neighboring countries sooner or later even if there are cultural differences. This trend can already be seen in ASEAN countries.

What is important here from the policy standpoint is the cooperation between Japan, the first country to achieve demographic transition in Asia, and other Asian countries. Furthermore, Japan has an important international role to play in solidarity and assistance to Asian nations which have already achieved demographic transition and making cooperation and assistance with other nations which demographic transition is lagging.

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Table 1 Demographic Transition Index in East and Southeast Asian Countries

Country/territory	Total fertility rate (TFR)	Average life expectancy at birth (years)	Demographic transition index
East Asia			
Japan	1.5	79.0	1.00
Hong Kong	1.2	77.9	0.99
Taiwan	1.7	73.8	0.93
Korea	1.8	70.6	0.88
China	2.2	70.9	0.88
North Korea	2.4	70.7	0.85
Mongolia	4.7	63.4	0.54
Southeast Asia			
Singapore	1.8	74.5	0.90
Thailand	2.2	68.1	0.85
Malaysia	3.5	70.7	0.75
Indonesia	3.0	60.1	0.68
Philippines	4.0	64.9	0.63

Sources: "1992 ESCAP Population Data Sheet" for total fertility rate and average life expectancy at birth (Statistical Yearbook of the Republic of China, 1991, for Taiwan (1989).

Remarks: Demographic transition index formula:

DTI = 0.5 [(7.6 - TFR)/5.5] + 0.5 [1 - (79 - e_0)/36. For the TFR, it is assumed that the TFR will decrease from the maximum (Yemen, 7.6) and reach the replacement level of 2.1. For the average life expectancy at birth, it is assumed that the average life expectancy at birth will reach the maximum of 79 years (Japan). The demographic transition contribution at the point where the TFR reaches the replacement level is given as 0.5, and the demographic transition contribution at the point where the average life expectancy at birth reaches 79 years is given as 0.5.

Table 2 Demographic Transition Index and Per Capita National Income in East and Southeast Asian Countries

Country/territory	Population (in millions, 1992)	Demographic transition index	Per capita national income, 1990 (US$)
East Asia			
Japan	124.2	1.00	25,430
Hong Kong	5.7	0.99	11,490
Taiwan	20.5*	0.93	7,332*
Korea	43.7	0.88	5,400
China	1,188.0	0.88	370
North Korea	22.6	0.85	–
Mongolia	2.3	0.54	–
Southeast Asia			
Singapore	2.8	0.90	11,160
Thailand	57.8	0.85	1,420
Malaysia	18.6	0.75	2,320
Indonesia	184.4	0.68	570
Philippines	65.2	0.63	730

Sources: "1992 ESCAP Population Data Sheet" ("World Development Report, 1992" for Taiwan (*)).

Remarks: Demographic transition indices from Table 1.

Chapter Two

INDUSTRIAL TRANSITION AND POPULATION IN JAPAN

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Introduction

There is no need to reiterate the fact that there is an intimate mutual relationship between population and the economic society. In this chapter we will analyze this relationship from the aspect of industrial transition. We must first explain what is meant by industrial transition. Here, industrial transition is taken it as changes in the industrial structure, as demonstrated by indices of changes in the distribution of workers among industries. In addition, as the relationship between industrial transition and population is manifold, our analysis will focus on the relationship between industrial transition and demographic dynamics, as well as between industrial transition and changes in the age composition of the population.

Another problem is the period to be analyzed. Here we will analyze the period from 1920, when the birth rate in Japan began to decrease, up to the present. Of course, the modern development of Japan began with the Meiji Restoration in 1868, after which extensive changes took place in the fields of politics, economy and society, so it might seem more natural to analyze this entire period. However, in this chapter we will limit ourselves to the period from 1920 on.

Let us first look at the trends in industrial transition and demographic dynamics from 1920 on. We can take the percentage of workers in primary industries as one index of industrial transition focusing on workers, and the crude birth rate as an index of demographic dynamics. Figure 1 shows the trends of these two indices. Though the percentage of workers and the birth rate are on different scales, we can see that the two run virtually parallel. Thus we can say that there is an intimate mutual relationship between industrial transition and demographic dynamics.

However, if we look closely at the graph, we can see that there is shift in the trends at the time of World War II. In the prewar period the speed of industrial transition was relatively slow, whereas in the postwar period the tempo accelerated. From this fact we can see that the relationship between industrial transition and population should be studied not as a continuous one from prewar days to the present, but rather should be divided into several different stages. In other words, there are major differences between the prewar and postwar periods, as well as between the periods of rapid economic growth and low economic growth, and this is naturally reflected in the relationship between industrial transition and population.

1 Relationship Between Industrial Transition and Populationin in the Prewar Period

At the time of the Meiji Restoration, approximately 80% of the population and labor force was distributed in rural areas or agriculture. With the ensuing progression of industrialization, this distribution gradually changed. In 1920, the percentage of workers in primary industries had already decreased to 54%. As shown in Figure 1, this percentage continued to decrease in 1930 and 1940.

However, if we look at the actual number of workers, the number of workers in primary industries had remained virtually the same -- 14.67 million in 1920, 14.71 million in 1930. The number then decreased slightly to 14.39 million in 1940, but this is an extremely small decrease.

After the Meiji Restoration, industrialization progressed smoothly, and while the foundations of an industrial nation were established at the end of the Meiji Era, the primary industries continued to maintain a substantially high importance. This fact has often been pointed out as a characteristic of the industrial transition of Japan. The significance of this characteristic can be said to be that the agricultural sector was preserved as a base to support the modern industrial sector, a base from which it was possible to provide a stable supply of food and labor.

This characteristic of the industrial transition in the prewar period is closely related to demographic dynamics, our theme. The fact that the traditional agricultural sector was preserved over a long period of time made it possible to maintain the pre-modern high birth rate and to supply labor for the industrial sector. According to population transition theory, modern development not only in Japan but in most developed countries began from the pre-modern stages in which both birth and death rates were high, after which first the death rate began to fall, with the birth rate only beginning to decrease after a substantial delay. Japan also followed this population transition process, but as the agricultural sector was preserved for a long time, through 1920 there was no clear decrease in the birth rate. From 1920 on the birth rate began to decrease gradually, due to the decrease of the birth rate in urban areas and the gradual concentration of the population in cities. However, the percentage of the rural population among the total population remained high and the birth rate in rural areas was also high, so the birth rate for the nation as a whole still remained high for some time.

2 Industrial Structure and Demographic Changes During World War II

The period between 1940 and 1945 is a particular one strongly influenced by the war. The industrial structure was vastly changed for the purposes of the war, and there was a marked increase of workers in secondary industries. In 1940, the number of workers in secondary industries was 8.44 million, an increase of more than 40% as compared to the figure of 6 million in 1930. The percentage among the total labor force also increased from 20% in 1930 to 26% in 1940. This trend became even more pronounced with the strengthening of the war structure. In Figure 1 we see that the percentage of workers in the primary industries decreased in 1940, but this is an indication of the temporary influence of the war structure rather than a long-term trend.

For the birth rate as well, the influence of the war was also unavoidable. From 1930 on, the crude birth rate continued to be above 30 per 1000 through 1937, aside from in 1934. As the war structure became firmly established in 1937, however, the birth rate began to fall below 30 per 1000. Apprehensive about this, the government took measures to prevent the decrease of the birth rate. As a result, it once again exceeded 30 per 1000 from 1941 to 1943. Considering this, it seems appropriate to view the decrease in the birth rate from 1930 to 1940 as a temporary effect of the war, in the same way as the changes in the industrial structure.

3 Industrial Structure and Population Issues in the Postwar Reconstruction Period

The period of several years following 1945 was mostly spent rebuilding the Japanese economy.

Japan was still in a state of postwar turmoil in 1950. The number of workers in the primary industries was 17.48 million, an increase of 21% as compared to 14.39 million in 1930. The percentage among the total labor force was 48.5%, substantially higher than the 44.3% of 1940. In the secondary industries, both the number of workers and the percentage among the total labor force were lower. The numbers and percentage were higher in the tertiary industries, but the increase was small.

The total labor force increased by more than 3.5 million from 1940 to 1950. The increase of workers in the primary industries over this period was over 3 million. In other words, the majority of the increase of workers over this period was absorbed by the primary industries.

The total population of Japan in 1940 was 71.9 million, but by 1950 this figure had risen to 83.2 million, an increase of more than 10 million in ten years. Two factors were at play in this increase. One was the repatriation of large numbers of military personnel, civilian employees of the military, and regular civilians from abroad. The other was the post-war baby boom, which resulted in a substantial natural increase.

Exhausted by the war, the Japanese economy did not have the capability to absorb such large numbers of people and workers, so agriculture was forced to accept much of this increase.

Population problems had been serious in Japan since before the war, and overpopulation can be considered one of the causes of the war. Despite this, in the difficult period following the war Japan was faced with the need to support an even greater population than in prewar days, leading to extremely serious population problems.

4 Return to Prewar Levels and Demographic Transition

Under the new postwar political and economic conditions, the economy gradually recuperated, and by 1955 most economic indices had returned to prewar levels (1934 - 36) or exceeded them. For example, if we take the prewar level as 100, in 1955 the industrial production index was 158, the agricultural production index 148, and the real per capita gross national product was 105.

However, in 1955 the number of workers in the primary industries was 162.9 million, 41.1% of the total labor force. Though this number is slightly lower than the figure for 1950, it is still higher than the prewar level, and the percentage among the total labor force still exceeded 40%. Because of this, the economic situation in 1950 did not yet permit optimism.

In particular, there was much anxiety over such employment issues as unemployment and latent unemployment. Reflecting this situation, the Council on Population Problems adopted the "Resolution on Population Supporting Capacity" in 1955 and the "Resolution on Disguised Unemployment Countermeasures" in 1958. The 1959 "White Paper on Population" stated the following concerning the increase in the labor population and the predicted trends for the labor population: "The increase in the labor population is growing yearly. At a level of approximately 300,000 before the war, from 1950 to 1955 it more than doubled to over 700,000, and from 1955 to 1960 has been swelling at an annual rate of 850,000 or 2.7 times. However, in the period from 1960 to 1965 the average annual increase will exceed 1 million, reaching a rate of more than three times the prewar level. This rate of increase will peak in 1965 and gradually recede thereafter, but in the period from 1965 to 1970 remain at current rates, and only in the 1975-80 period will it fall below current levels. Even so, this still signifies an annual increase of 1.5 times the prewar rate. We must be prepared for the labor market to experience

extremely high pressure over the next ten years." (Pages 30 to 32.)

The cause for this increase in the labor population was the fact that the large generation born during the prewar baby boom progressively reached the productive age and entered the labor market. Thus this was an established fact. Not only was there no possibility of substantially reducing the labor rate, there were also no easy solutions to the problem. The only possible strategy was to accelerate the economic growth rate and greatly increase employment opportunities.

The "National Income Doubling Plan" devised in November, 1960, had various different objectives, and one of them was of course to resolve the employment problem. As is well known, this plan had an extremely strong impact on the Japanese economy, and resulted in immense changes in the national economy, not only in quantity but also in quality.

On the other hand, if we look at the population, there were important changes during the ten-year period from 1950 to 1960. There were 2.6 or 2.7 million births annually during the baby boom years of 1947 to 1949. This was a transitory phenomenon caused by the rush of marriages and births which had been postponed during the war. However, the nation at the time was extremely poor, and there were difficulties obtaining even the basic necessities of food, clothing and shelter. Thus, the general public was well aware of the problem of excess population. This is evidenced by the fact that even before the "Eugenic Protection Law" was established in 1948, opening the doors to the legalization of artificial termination of pregnancy, illegal abortions were already being performed in great numbers.

With the establishment of the "Eugenic Protection Law" and the spread of the family planning movement, the birth rate decreased rapidly. This can be seen clearly in Figure 1. The number of births hit bottom in 1957, at 1,570,000, more than one million less than the number of 2.6 million or greater during the baby boom. In 1957, the birth rate was 17.2 per 1000, less than half the rate of 34.3 during the baby boom. Thus, the transition from the pattern of fecundity prior to the war, when the average number of children was 5, to the postwar pattern of low births with an average of 2 children, was accomplished in the short period of a decade. There are various reasons for this. The main reasons are, as already mentioned, the fact that births had been restricted since before the war for certain regions and social classes, that this restriction was then extended in the atmosphere of social freedom which reigned after the war, that restricting births then became a necessity for the defense of the nation's living standards in the difficult period following the war, and that access to contraceptives and abortion became easier.

Thus, the birth pattern of having an average of two children was attained before rapid economic growth began, but continued for approximately 20 years into the middle of the 1970s.

5 Rapid Economic Growth and Industrial Transition

The "National Income Doubling Plan" called for annual economic growth of 7.2% with the aim of doubling the national income in ten years, but when this plan was announced the economy actually grew faster than called for in the plan. As can be seen on Table 1, the growth of the real GNP over the previous year was 12.5% in 1960, after which the economy grew rapidly at an annual rate of over 10%, aside from three years, through 1969. As the economy continued to grow rapidly, mainly in the secondary industries, the demand for workers increased greatly. The number of people employed grew remarkably. As for the supply of labor, on the other hand, the labor population at one time was growing at an annual rate of nearly 2% up to the middle of the 1960s, as seen in the quote from the "White Paper on Population", but despite this it was far short of the increase in the demand for labor.

The rapid economic growth which began in 1960 greatly changed Japan's industrial structure, but in the process decisively affected the supply and demand for labor, inducing a transition from the chronic excess labor situation in prewar days to a labor shortage. This process also brought major change to the role of agriculture and the rural areas.

One of these changes can be seen in the decrease of the number of people employed in the primary industries. This number was approximately 14.4 million in 1960, roughly the same number as in prewar days, but decreased to 11,860,000 in 1965, 10,150,000 in 1970, and fell below 10 million in 1975. The percentage of those in primary industries with respect to the total number of employed also decreased rapidly, from 32.7% in 1960 to 24.7% in 1965, 19.3% in 1970 and 13.8% in 1975.

Before the war, the rural population had rich potentials for population supply due to the high birth rate. It kept a certain number of workers as necessary for rural production, and supplied the remaining population to non-agricultural sectors. This relationship continued even after the war until the beginning of the period of rapid economic growth. At this time however, the relationship crumbled. There were two causes for this. One, as already stated, was that extremely high growth continued, mainly in the secondary industries, over an extended period of time, generating an acute excess demand for labor. The other is that the increase in the standard of living brought about by rapid growth triggered a decrease in the birth rate, not only in cities but also in rural areas. In prewar 1930, the standardized birth rate by prefecture was 23.9 (per 1000) in Tokyo and 22.1 in Osaka, but 45.0 in Aomori, 35.3 in Miyagi. Thus there was a major difference in the birth rate between urban and rural areas. In 1955, this standardized birth rate had dropped across the board to 12.0 in Tokyo, 12.6 in Osaka, 22.5 in Aomori and 21.4 in Miyagi, but the difference between urban and rural areas was still great. In 1965, however, the difference had become extremely small, with 14.2 in Tokyo, 15.8 in Osaka, 18.3

in Aomori and 17.3 in Miyagi.

Labor supply conditions are greatly affected by the changes in population conditions as well as changes in the labor rate. During this specific period, the most important change was the decrease in the labor rate among young people due to the increase in the percentage of young people continuing their studies. The labor rate for the 15 to 19 year age group (including both males and females) was 52.2% in 1955, then decreased to 38.1% in 1965 and 22.9% in 1975, less half the rate in 1955.

As a result, there were major changes in the increase in the labor force as seen by age group and in the age composition. As shown in Table 2, the absolute number of young workers in the 15-19 and 20-24 age brackets was decreasing. However, as predicted in the "White Paper on Population", the number of middle-aged workers was increasing substantially. The result was that the overall increase in the labor population slowed down, and for the age composition, middle- and upper-aged workers began to account for a larger portion of the labor force.

The abrupt industrial transition induced by rapid economic growth was accompanied by a transition in the regional distribution of the population and labor force. The number of people migrating between prefectures was at the 2 million level in the middle of the 1950s, then increased to the 3 million level in the 1960s and to the 4 million level in the 1970s. The majority of this migration was due to migration of the population and labor force to the three major urban areas of Tokyo, Osaka and Nagoya, the stages for rapid economic growth. The surplus transfer to these three major urban areas reached a peak at the beginning of the 1960s, at an annual rate of over 600,000 persons.

The core of those migrating between regions was formed by young people entering the labor force for the first time after graduation, a group for which it is easy to migrate, and in particular by those migrating from rural areas to the industrial regions which were the main stages for economic growth. As a result, the concentration of the population in these three major urban areas progressed rapidly and the age composition in these areas became younger. On the other hand, the population of rural areas from which population was leaving decreased the age composition in these areas became older. Thus arose the issues of overpopulation and depopulation.

6 Labor in the Increased Importance of Information and Services

As we entered in the 1970s, shadows began to appear in the rapid economic growth and the economic structure also began to change gradually. In 1970, 19.3% of those employed were in the primary industries, 34.0% in the secondary industries, and 46.6% in the tertiary industries. Thus, there was a strong concentration of employment in the tertiary industries. This phe-

nomenon had occurred before this time, but in such cases was accompanied by the particular circumstance that latent unemployment was concentrated in this sector. After the period of rapid economic growth, however, the number of those employed in the tertiary industries grew relatively for different reasons.

During the period of rapid economic growth, production and employment grew substantially in the secondary industries, but the increase in productivity due to technological progress was also marked in this sector. As a result, the growth of employment in this sector was relatively low. On the other hand, with the substantial improvements in national life, information and services took on increasing importance, and as a result the tertiary industries developed. In this way, in the period after rapid economic growth, employment in the tertiary industries grew once again.

One important change at this stage was the increase in the female labor force. For the circumstances already mentioned, the growth of the labor force as a whole was slowing down, so as the demand for labor grew due to the increasing importance of information and services, it was necessary to employ women to fulfill this demand. The annual increase in the labor population from 1975 on (Table 3) was a low 0.8% for males, but a high 1.4% to 1.6% for females.

We can see from Figure 2 that it was the rise in the labor rate which permitted the female labor force to increase at this time. From 1975 to 1990, the labor rate for the core age groups from 25 to 54 increased greatly.

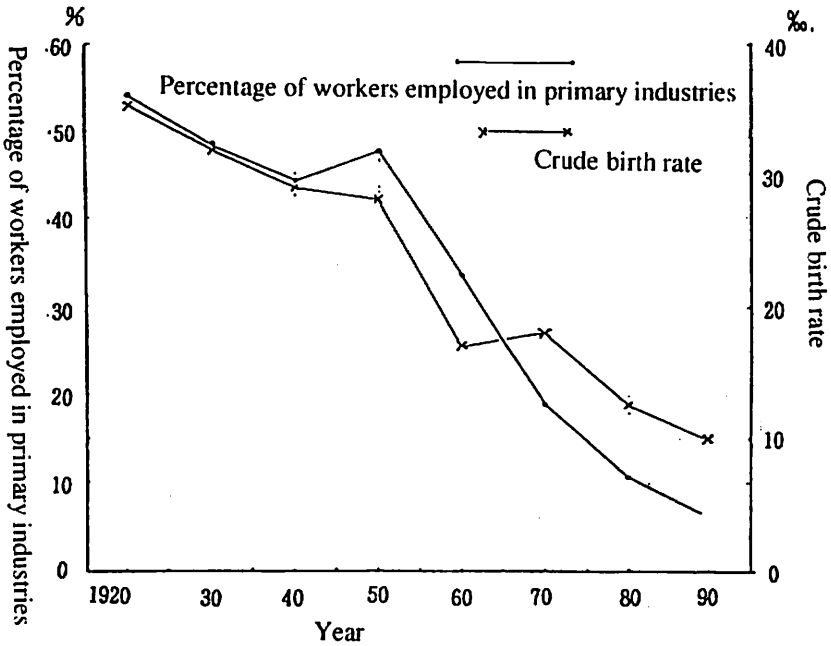
The most important factor generating the increase in the female labor force was the large increase in demand due to the greater importance of information and services in the economy -- in other words this cause was on the demand side. However, there were also causes on the supply side as well, such as the increased desire of women to work due to their increasingly higher level of education, the fact that it became easier for women to work due to the "Equal Employment Opportunity Act", and the fact that the number of children decreased so the number of hours women could work increased.

It is very difficult to predict the direction in which the Japanese economy will go now that the bubble economy has burst, but we can predict the future of population and labor with relative accuracy. The Japanese population is already in the process of aging. As of 1990 12% of the population is aged, and this figure is certain to increase to approximately 17% by the end of the century and 25% in the year 2025, creating an "Ultra-aged society". On the other hand, the Economic Council's "Choices for the Year 2010" predicts the future of the labor population as shown on Table 4. From the end of this century through the beginning of next century, the growth of the labor population is expected to gradually slow down and eventually decrease. In this case, the industrial structure is also expected to change in both the production structure and employment structure, with the weight of the sector producing material assets decreasing, the

weight of the network sector leveling off, and the weight of the intellectual and service production sector increasing.

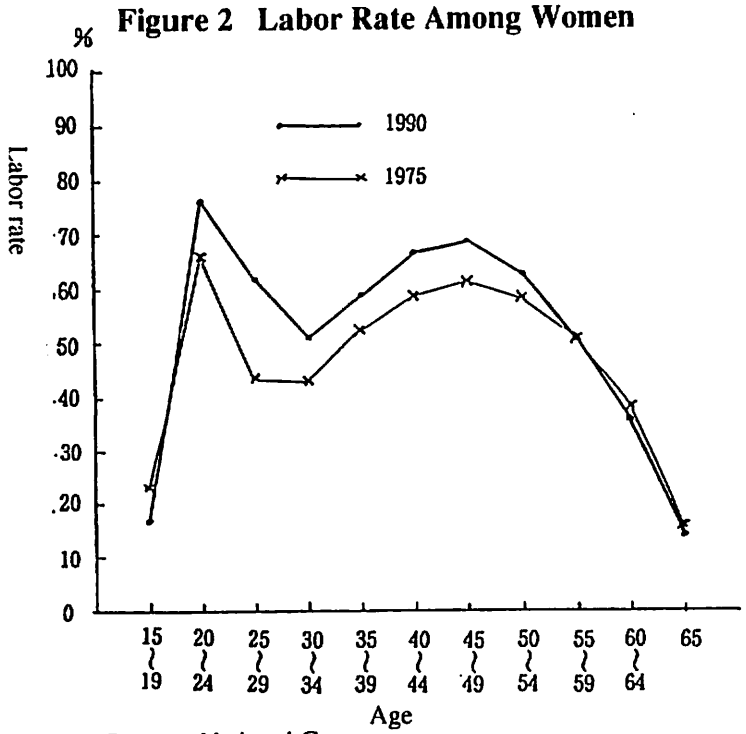
As already stated, industrial transition can be accomplished with ease when economic growth is high and the labor supply is plentiful, but with economic growth expected to be low and the labor supply stringent, it remains to be seen whether or not industrial transition can be attained as planned.

Figure 1 Trends in Industrial Composition and Birth Rates



Source: National Censuses, Vital Statistics

Figure 2 Labor Rate Among Women



Source: National Censuses

Table 1 Changes in Economic Growth Rate and Labor Force (%)

Year	Real GNP	Labor population	Employment
1960	12.5	1.91	5.72
61	11.8	0.86	4.20
62	7.7	0.98	3.87
63	10.1	1.28	3.61
64	9.9	1.07	3.41
65	6.4	1.90	4.48
66	11.6	1.91	3.43
67	10.9	1.98	2.59
68	13.5	1.42	2.36
69	12.2	0.79	1.99

NOTE: Growth rate over previous year

Table 2 Age Composition of the Labor Population (in 1000s)

Age	1955	1965	1975	1955~65	1965~75
15~19	4,500	4,164	1,823	−336	−2,341
20~24	6,566	7,153	6,622	587	−531
25~29	5,651	6,087	7,642	436	1,555
30~34	4,403	6,094	6,564	1,691	470
35~39	3,807	5,864	6,381	2,057	517
40~44	3,749	4,687	6,505	938	1,818
45~49	3,294	3,908	5,884	614	1,976
50~54	2,856	3,590	4,406	734	816
55~59	2,196	2,904	3,288	708	384
60~64	1,506	2,065	2,574	559	509
65	1,713	2,136	2,701	423	565
Total	40,240	48,652	54,390	8,412	5,738

Source: National censuses

Table 3 Labor Population (in 1000s)

Year	Total	Males	Females
1975	54,390	34,306	20,084
80	57,231	35,647	21,584
85	60,391	37,072	23,319
90	63,658	38,613	25,044
1975~80	1.0%	0.8%	1.5%
80~85	1.1	0.8	1.6
85~90	1.1	0.8	1.4

Source: National censuses

Table 4 Labor Population Estimates (in 10,000s)

Year	Total	Males	Females
1990	6,366	3,861	2,504
95	6,610	3,912	2,698
2000	6,739	3,977	2,762
05	6,717	3,953	2,764
10	6,603	3,851	2,752
1990~95	0.8%	0.3%	1.5%
95~2000	0.4	0.3	0.5
2000~05	△0.0	△0.3	0.0
05~10	△0.3	△0.5	△0.0

Source: Economic Council, "Choices for the Year 2010"

Table 5 Future Prospects for the Industrial and Employment Structure

Nominal GNP	1989	2000	2010
Material asset production sector	42.1%	38.9%	40.4%
Network sector	32.6	33.8	32.3
Intellectual and service production sector	25.3	27.3	27.3
Employment structure			
Material asset production sector	41.3%	36.9%	35.3%
Network sector	29.2	28.7	28.7
Intellectual and service production sector	29.5	34.4	36.0

NOTE: The "network sector" refers to the electricity, gas, water, transportation, communications, commerce, finance, insurance and real estate businesses, the "intellectual and service production sector" to management services, medical and health services, educational services, leisure, public services, etc.

Source: "Choices for the Year 2010", 2010 Committee, Economic Council, June, 1991.

Chapter Three

INDUSTRIAL AND DEMOGRAPHIC TRANSITION IN EAST ASIA

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Introduction

During the past two or three decades, the economic dynamism of East Asia has been a focus of world attention. Annual growth rates of GNP have been higher than in any other part of the world. The region's international trade has grown commensurately, and by the early 1980s the volume of U.S. trade with East Asia had surpassed that of U.S. trade with Europe. Thus far, however, this dynamism has been confined to the free-market economies of East Asia and to some of the Southeast Asian countries. Three major factors have contributed to this dynamism: (1) demographic diversity and the different stages of industrial development that these countries are experiencing, (2) the common cultural background of East Asia, and (3) the geographical proximity that these countries have with one another.

East Asia has experienced two kinds of major change: the demographic transition and the industrial transition. The former is characterized by the transition from high to low birth rates and from high to low death rates.* The latter can be defined as the transition from an economy in which the agricultural sector predominates in gross domestic product (GDP) to one in which the share of industry, manufacturing, and services is predominant. Interaction between countries in different stages of demographic transition and different stages of industrial development generates economic dynamism by facilitating the transfer of capital and technology from countries that are at a more economically advanced stage to those that are less economically advanced.

The success of this process in recent decades can be seen in the examples of such transfer from Japan to Korea, Taiwan, and other newly industrializing economies. The textile industry, for example, flourished for a long time in Japan, but inevitably it declined as a result of the demographic transition. Japanese industry can no longer justify the high cost of wages relative to textile manufacturing output. At the same time, a relative scarcity of labor has emerged in Japan's working-age population. As the quality of Japanese labor improved, Japanese wage-earners became too expensive for the old, labor-intensive industries. Workers, moreover, began to seek employment in the more advanced industries, which are capital intensive and apply higher technology. The textile industry thus moved to geographically nearby Korea, which was experiencing an earlier stage of the demographic transition and had an abundant labor supply available at substantially lower wages. Other examples can be cited for both Korea and Taiwan. This interactive process has been greatly facilitated and expedited by the cultural affinity shared in common among the countries of East Asia.

The dramatic changes heralded by perestroika and the liberalization of China's economy provide the potential for the transition away from military rivalry and international tension in East Asia to a mutually beneficial environment of peaceful coexistence and economic

cooperation. These changes can have a big impact on the industrialization models of the countries and territories in East Asia; namely China, Japan, North and South Korea, Mongolia, Taiwan, Hong Kong and the Russian Far East. Much greater economic dynamism can be generated in the Japan Sea-rim region, for example, because of the demographic diversity and differences in industrial structures in the surrounding countries. The combined population of the area is about 300 million people, representing a variety of complementary human resources in terms of educational level, technical skills, wage differentials, and the availability of labor required at different stages of the industrial transition. The abundant labor supply in Northeast China and North Korea, for example, can benefit from the more highly skilled labor and industrial-technical know-how of South Korea, along with the advanced technology of Japan. Economic development in the region can be promoted rapidly by combining the massive surplus capital (which is currently available in Japan and potentially available in South Korea) with the abundant agricultural, human, and natural resources of Northeast China.

Japanese capital together with moderately priced industrial and construction technology available in South Korea can facilitate the rapid construction of essential infrastructure in the underdeveloped Russian Far East and the Tumen River delta. For most of these countries, this interaction can be further expedited and facilitated for their shared cultural and historical background, the use of Chinese characters as a common medium of communication, and shared social values derived from Confucianism, Buddhism, Taoism, and Shamanism. The interactive process is further facilitated by the cultural affinity among the Northeast Asian countries.

South Korea is moving capital overseas and has a growing labor shortage. It is also trying to develop high technology. South Korea is more interested in a market than in producing and bringing back goods. Korea needs to "test" its technology in a large but semi-enclosed market. Northeast China has a huge potential market but has inefficient production and a shortage of both capital and technology.

The Russian Far East has a huge underdeveloped resource base and very little labor and capital. There is a high human capital relative to population, but it lacks a critical mass. Decisionmaking must be decentralized. North Korea has an inefficient economic structure. Under proper conditions, North Korea could have a "catching-up boom." It has the necessary human capital but, with any economic growth, it would soon become labor short unless it allowed immigration. Mongolia lacks both capital and labor. It is land-locked, and its main assets are land and natural resources.

This paper examines the industrial and demographic transition in East Asia, within the broader context of the whole Asia-Pacific region, with particular reference to complementarities and cultural affinity. The East Asia region has a long-neglected geographical and cultural unity that has significant implications for the dynamic growth necessary to transform the region in the twenty-first century. The region as defined geographically, comprises the People's

Republic of China, Mongolia, the Korean peninsula, the Russian Far East, Japan, Taiwan and Hong Kong, thereby encompassing the entire Sea of Japan and the Yellow Sea, and the East China Sea. This region because of the gigantic size of the PRC, has a population of 1,335 million which is expected to increase to 1.5 billion by the year 2000.

Economic and Demographic Changes in the Asia-Pacific Region

(1) GNP Growth and Demographic Change

Economic growth rates of countries of the Asia-Pacific region during the quarter century since 1965 are outlined in Table 1. Included are the purposes of discussion countries in East Asia and also five countries belonging to the Association of Southeast Asian Nations (ASEAN). We must note here that relevant economic and demographic data for North Korea and Mongolia are not completely available. Clearly, as of 1990, the countries of the region had attained relatively high levels of per capita gross national product (GNP). Japan's average income is comparable to other industrial market economies, and the remaining nations (except China) are well within the range of middle-income countries. With the exception of the Philippines, all of the Asia-Pacific economies listed experienced average annual rates of per capita GNP growth of 4 percent or greater during the 1965-90 period. Their rates exceed the average growth rates of the low-income, middle-income, and industrial economies.

Japan was the first among these countries to experience a dramatic fertility decline, which occurred in the 1950s. Table 2 shows the total fertility rates, life expectancies, and the rates of change in these two demographic indicators for the countries and territories of the East Asia region. The total fertility rate (that is, the number of children per woman of childbearing age) declined by an annual rate of 4 percent or more between the two periods. The fertility decline in South Asia, Latin America, and Africa has been at a much slower pace over the same period, and fertility rates remain much higher than in many of the countries of the Asia Pacific region. The speed of fertility decline in the region is also remarkably rapid in comparison to the historical experience of the West. Demographers have estimated that comparable fertility declines in the Asia-Pacific region have taken one-quarter to one-half the time that they took in the West (Kirt 1971; Knodel 1977)

Moreover, during 1960-90 life expectancy increased by more than five years in all of the East Asian populations and by more than ten years in South Korea and China. Although survival has also increased dramatically in the other regions, the average life expectancy in South Asia and Africa remains considerably below that in east Asia.

(2) Interaction between the Industrial and Demographic Transition

We have seen that both the demographic and economic progress in the East Asia region over the last 25 years has been truly remarkable. Demographers and economists have long studied the relation between demographic and economic changes, especially as they occurred in the West. Particularly noteworthy have been the attempts to develop a theory of demographic transition that relates the process of changing from a high fertility and mortality population to a low fertility and mortality population to increases in literacy, urbanization, and industrialization (see for example Notestein 1953). Although the demographic transition framework accurately reflects the stylized facts of the development process in most populations of the world, it has been unable to provide specific predictions of the timing of oneset or speed of fertility decline (Coale 1973).

Recently Oshima (1983) has argued that a major link between the demographic and industrial transitions in East Asia was the spread of mechanization in agriculture, industry, and services. In the Oshima scenario, as per capita income increases, full employment is approached and labor-saving equipment is used increasingly. The increase in mechanization leads to an increase in secondary education, as a response to the need for more skilled labor, and increased education leads to more rapid fertility decline and the approach of the end of the demographic transition. Woven into this argument are increased employment opportunities in urban areas, deriving in part from export production although the framework is basically domestic. Furthermore, the scenario begins fairly late in the demographic transition, when full employment is approaching, and ignores the earlier stages when labor is still relatively abundant and cheap.

In the case of the countries and territories of the East Asia region, additional factors are the speed o the demographic transition and the demographic diversity of the region (Table 3) and the economic influence of neighboring countries on each other, especially through foreign investment. Sectoral production figures (Table 4) and labor for composition in industry (Table 5) are consistent with this argument. Although this hypothesis cannot be tested rigorously--as is also the case of the basic demographic transition theory and Oshima's argument-we believe that given the importance of factor mobility and trade in Asia, it is not unreasonable to argue that in the postwar period the experiences of neighboring countries affected each other, particularly in regard to fertility behavior. At the same time, continuing demographic diversity and factor mobility augur well for future fertility decline and economic growth in those parts of Asia that are further behind in the demographic and industrial transitions.

Most of the poorest countries of the world are faced with a relatively abundant supply of labor but possess an insufficient stock of capital with which to increase productivity (Lewis 1954). Increased investment in productive machines and equipment is constrained by the more immediate problems of daily subsistence, which are compounded by the rapid population

growth typically experienced by these countries. To rectify the problem, some combination of (1) increased investment, (2) less labor-saving production technology, or (3) slower population growth is required.

One possibility is greater foreign investment in the less developed countries (LDCs) by the more developed countries (MDCs). Not only can this activity benefit the LDCs, but also it may help solve problems of labor shortages of the MDCs as the latter's population growth rates approach zero. When an MDC faces wages rises together with slower growth in its labor force, it may find the relatively abundant and cheaper labor force of an LDC more attractive. By investing overseas, the saving rate in the MDC is maintained without a reduction in the domestic return to capital or an increase in domestic wages. At the same time, the flow of capital from the MDC to the LDC fills the LDC's resource gap between desired investment and locally mobilized saving.

It is important to note that the developing country receiving the capital must invest in projects that will generate sufficient revenue to repay the debt incurred. Balanced growth in both the agricultural and the industrial sectors should be emphasized. Improvements in the agricultural sector can be achieved with the transfer of new agricultural technologies that improve levels of output and productivity.

The two major sources of innovation for increasing farm yields are (1) the introduction of labor-saving machinery (i.e.,"mechanized" agriculture) and (2) organizational and biological-chemical innovations. The first source of technological progress in agriculture may involve the importation of sophisticated capital equipment from an industrialized country and may not be "appropriate" in a developing country where labor is relatively abundant and funds for investment in capital are not available. The second source of innovation includes irrigation, land reform, hybrid seeds, fertilizers, and insecticides. It is land-augmenting and leads to increased output per worker without displacement of labor by capital.

In the industrial sector, investment in industries that are consistent with the underlying comparative advantage in the developing country should be followed. The mix of domestic natural resource endowments is a principal factor in determining the leading industries that fuel the nations's development. Relative resource abundance will imply different possibilities for industrial development and economic growth in each country. It appears, however, that in the early stages of development of all LDCs, labor is a relatively abundant factor. Hence, labor-saving technologies and capital-intensive industries that have minimal employment effects should be avoided.

There is a continuing debate about whether developing countries would be wiser to follow an inward-looking policy approach or to adopt an outward-looking stance (James, Naya, and Meier 1987). The more successful countries of the East Asia region initially pursued an import-substitution strategy to establish manufacturing sectors in their economies. Eventu-

ally, however, as domestic markets become saturated, the countries became more outward-looking, and further growth was largely due to the expansion of exports. A necessary condition for this transition to occur is that the LDC have a large enough market in which to sell its products. That is, the world trade market must be relatively open, and the government policies of developed and developing countries toward external trade must not be too restrictive.

As additional (and appropriate) investments are made in the LDC, several events that directly and indirectly affect the pace of the demographic transition take place. In the agricultural and industrial sectors, the importation of capital raises the marginal product of labor, and employment and labor productivity begin to rise. As employment and income grow in the developing country, female labor force participation and women's wages will tend to increase. Increased wages and employment opportunities for women outside the home lead to an increase in the opportunity cost of bearing and raising children and, consequently, to a decline in fertility. As incomes increase and as health and life expectancy improve, parents will also invest more in quality factors rather than in the quantity of their children. As shown in Table 6 rapid increases in secondary school enrollments have been achieved by the countries in East Asia although there are substantial country differences. As educational attainments will rise and fertility will fall for this reason, too.

Given the usual wage differentials between urban and rural areas, migrants will be attracted to cities, where the reduced value of children as workers and the more modern attitudes and greater access to family planning services will also work to lower fertility. Finally, as fertility falls, population growth will slow, agricultural productivity and industrial investment will increase, and the proportion of the total labor force working in agriculture will fall. Thus, the increased literacy, urbanization, and industrialization dimensions of the demographic transition are all aided by the investment of the MDC in the LDC.

The complementarity of the different demographic and economic stages of development between the MDC and the LDC can be used for further economic growth in both countries. The flow of capital and technology from the MDC to the LDC affects the speed at which the demographic transition in the LDC is completed. The transition most likely will occur without foreign investment, but the investment facilitates it. LDC can lead to greater domestic saving and investment to fuel further economic growth. At the same time, the MDC experiences a higher rate of return on the capital exported to the LDC with no accompanying rise in wages. Moreover, in the long run, by raising GNP in the LDC, industrial growth in the MDC will increase as the market and demand for its modern sector products expands.

Although MDCs that are a great distance from LDCs can and do invest in the latter geographical propinquity and cultural similarities may facilitate such investment. It can be argued that this has been the case in the East Asia region. In the following section, we describe briefly the development experiences of South Korea and Taiwan, two of the Asian NIEs, and

how Japanese investment in these economies may have facilitated the demographic transitions of their populations.

(3) Case Studies of the Interaction Model

Japan's postwar economic growth is well documented (see Patrick and Rosovsky 1976, for example), as is the rapid completion of its demographic transition after the war (Mosk 1977). Although the labor force grew at more than 1 percent annually in the 1960s, productivity and wages increased sharply. As more Japanese young people continued their education beyond middle school, the supply of semiskilled workers began to decline. Fertility reached the replacement level of 2.1 children per woman by 1960, and accordingly the growth of the labor supply slowed in the 1970s at the same time that demand for labor was increasing. Not surprisingly, Japanese investors began to look overseas for greater returns to their capital. Japan was a net debtor country in the early 1960s, but even then it was investing overseas and by 1967 it had become a net creditor. The value of Japanese investment overseas tripled from $904 million in 1970 to over $3 billion in 1975 (Japan Statistics Bureau 1986).

Although South Korea and Taiwan were less attractive to Japanese investors than Hong Kong and Singapore in terms of bureaucratic red tape and less-developed infrastructures, they were more attractive in terms of their lower wages, shorter distance from Japan, and historic ties with Japan. Yoshihara (1978:31) has observed that "the two countries have many businessmen who speak Japanese and understand the Japanese business philosophy." Large companies with English-speaking staff might have been able to operate in Hong Kong and Singapore, where there was a British colonial legacy, but small companies without such expertise were attracted to South Korea and Taiwan. Consequently, investment in these two countries was greater than the others in the early 1970s.

Following the Korean War, foreign grants and loans comprised almost half of total Korean saving in 1953-55 and four-fifths by 1960-62 (Kuznets 1980). As American aid began to decline in the 1960s, grants and loans under the Japanese property and claims program increased. However, the largest inflow consisted of private loans, especially from Japanese lenders after relations between the two countries were normalized in 1965.

The magnitude of direct foreign investment in Korea was small relative to foreign borrowing, but its scale increased dramatically from $0.6 million in 1962 to $317 million in 1973 (Koo 1985). Although from 1974 to 1978 only 1 to 2 percent of the total Korean labor force were employed by foreign firms, 8 to 10 percent of employees in the manufacturing industries were employed by them. Thus, the employment-creation effects in the modern sector of foreign investment were considerable, even when only the direct effects are considered.

During Korea's first five-year development plan (1962-66), 75 percent of foreign in-

vestment funds came from the United States, whereas only 21 percent came from Japan (Koo 1985). In the next plan period (1967-71), however, the percentages were 40 and 45, respectively, and during 1972-76 they were 11 and 72. Thus, in the late 1960s and throughout the 1970s, Japan was the major foreign investor in South Korea. Although there is a variety of reasons for the pattern and timing of Japanese investment (e.g., the revaluation of the yen in the early 1970s), the general perception is that, until the middle of the 1970s at least, Japanese investors placed their money in labor-intensive industries in order to take advantage of the cheaper and relatively abundant Korean labor force.

In 1960, 33 percent of the Japanese labor force was in the agricultural sector, where surplus labor is typically found, while 66 percent of the Korean labor force worked in agriculture. Industry accounted for 45 percent of GDP in Japan, but only 20 percent of GDP in Korea. By the 1980s the percentages had changed considerably. Only 12 percent of the workers in Japan and 34 percent of the workers in Korea remained in agriculture. During this period, however, the proportion of GDP generated by the industrial sector declined slightly in Japan, whereas it almost doubled in Korea.

Over the same two decades, the proportion of the economically active Korean female population (over age 15) increased from 27 to 47 percent, and the proportion of females among the nonagricultural labor force increased from 25 to 32 percent (International Labour Office 1986), so women played an increasingly important role in the labor force. Over the same period, fertility declined dramatically from 6.0 children per woman in 1960 to 4.3 in 1970 and 2.7 in 1980 (Coale, Cho, and Goldman 1980; Retherford, Cho and Kim 1983). The period of rapid growth in Japanese investment in Korea, 1970-75, was also the period of the greatest drop in fertility (26.1 percent) in Korea. As stated earlier, we do not mean to imply that foreign investment caused the demographic transition or fertility decline in Korea, but the facts presented above are certainly consistent with the hypothesis that Japanese investment contributed to and hastened these changes.

(4) East Asia vs. Europe

It is apparent from the earlier study by Cho and Martin (1990) that there is greater diversity in demographic and development status among the Asian-Pacific countries than among the countries of Europe. The European countries have completed the demographic transition. The countries in the East Asian region, however, provide a pronounced contrast especially in the earlier period in 1980 (Table 3). While Japan has for the most part completed her transition to stable, low birth and death rates, and followed by Korea and Taiwan almost having completed the demographic transition, PRC has still a considerable distance to the completion. Although PRC has achieved a phenomenal reduction in fertility following the strong popula-

tion control policy since the 1970s, the extent of urbanization and educational attainment of the population is still in the lower range among the East Asian countries. North Korea is at about comparable level with PRC but Mongolia has only achieved about a half distance to the completion of demographic transition. Hong Kong being a city state, is treated as an exceptional case.

The indices of economic development** reflected the same patterns. Again, the European countries have per capita GNP's as measured in 1982 U.S. dollars and shares of the agricultural sector in GDP which are very similar to one another. The percent of GDP attributable to the agricultural sector are all less than 10 percent.

In Asia, on the other hand, per capita GNP ranges from a low of $350 in China to a high of $23,810 in Japan-a striking difference. In addition, the structure of the economy in the East Asian countries is also very different. Similar to Western Europe, Japan has less than 5 percent of its GDP attributed to the agricultural sector. South Korea and Taiwan, gradually following Japan with the agricultural sector contributing close to 10 percent, to total GDP. PRC shows the highest percentage of 27% and Mongolia 17%. While the share of GDP claimed by the manufacturing sector is very similar across the European countries, the contribution of this sector in the Asian-Pacific countries varies widely.

Thus, while the European countries are all in a similar stage of demographic and economic development, the countries of East Asia still span a wider range in terms of stages of economic and demographic development. Thus, the dynamism of the demographic situation in the East Asia countries can be a major impetus to the tempo of economic development in the nations. In Europe, however, the potential for the interaction between the neighboring nations to stimulate vigorous economic growth is limited since the countries are all in approximately the same stage of economic and demographic development. In terms of the model presented, the potential for rapid growth in the European region in the future is limited since the nations cannot take advantage of opportunities for investment in neighboring labor-abundant countries.

Moreover, the static population growth in the European region implies little potential for expansion of markets in Europe through the demographic variable. Population growth in all the European countries, excluding Iceland which is relatively small, is low with growth rates less than or equal to 1.0. The dynamism and diversity of population growth in the East Asian region stands out in a contrast. This is not to say that rapid population growth is better than zero population or stable growth, but given the diversity and complementarity of the demographic and economic scenario in the neighboring countries, the Asian region holds a potential for future growth.

Conclusion

Despite the complementarities, common historical heritage, and cultural affinity, the interaction model discussed here could not be applied to all of the East Asia region in the past, because of the long-standing political and military conflicts. Ideological and military barriers sealed off the market economies from the centrally planned ones and precluded such interaction. During most of Japanese history, the west coast of Japan was the great avenue of trade with the Asian continent. Only since the Meiji period has the east coast become the country's main door principally onto the western world. In the twentieth century, the west coast of Japan and the east coast of Korea were virtually ignored and remained underdeveloped, primarily for political reasons. The northeastern provinces of China and the Soviet Far East were likewise neglected in the national development process, because of the prevailing political and military tensions in the region.

The advent of perestroika, the relaxation of political and military tensions, the erosion of communist ideology in the Soviet Union, and the gradual acceptance of the market economy through China's open-door policy have all combined to stimulate economic activities among all the countries and territories in East Asia. This overall trend toward internationalization of the world economy is leading in the direction of the borderless economy. In the process, there has been a transition for ideological barriers to an emerging environment in which cultural and institutional barriers play an increasing role.

The concept of regional economic cooperation and development in Northeast Asia is receiving increasing attention among the countries involved, for a number of reasons. From a historical perspective, East Asia during the past few centuries has seen the rise and fall of national groups based on ethnic identifications. The population of East Asia is divided by international boundaries into separate national economies, some of which have been arbitrarily isolated from the others. Despite this artificial division, the people of the region share in common a rich cultural heritage, including traditional East Asian values. Considered collectively, the Chinese, Japanese, Koreans, Manchurians, and Mongolians have a number of ethnic and cultural affinities that can potentially strengthen economic relationships within the region. The commonalties include material culture (such as clothing and food) and the values of traditional Shamanism, Buddhism, and Confucian education based on the use of Chinese characters. In addition to geographic proximity, East Asia offers a great potential for intraregional economic cooperation to stimulate regional development, based on the highly complementary factor endowments in terms of natural resources, abundant labor supply, technology and capital.

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Table 1 Economic Growth in the Asian-Pacific Region

	Population (Million) 1990	Total fertility rate (1990)	Per capita GNP in 1990 (US $)	Annual growth rate of per capita GNP (1965-1990)
Low-income countries	3,058	3.8	80−600	2.9
Middle income countries*	1,088	3.7	630−7,050	2.2
Industrial market economics	816	1.7	9,550−32,680	2.4
Countries of the Asian-Pacific region				
Japan	124	1.6	25,430	4.1
China	1,134	2.5	370	5.8
Korea, Republic of	43	1.8	5,400	7.1
Korea, People's Democratic	21.3	2.5		
ASEAN				
Singapore	3	1.9	11,160	6.5
Hong Kong	6	1.5	11,490	6.2
Taiwan	20.2	1.8	7,761	6.3**
Malaysia	18	3.8	2,320	4
Thailand	56	2.5	1,420	4.4
Philippines	61	3.7	730	1.3
Indonesia	178	3.1	570	4.5

* Excluding China and India.

** This figure is for 1965-1989.

Sources: World Bank 1991. World Bank Development Report 1991. New York: Oxford University Press. Statistics Yearbook of the Republic of China 1991. Population Reference Bureau (1990).

Table 2 Per Capita GNP Growth Rates, Total Fertility Rates and Life Expectancy

	Per capita GNP growth rate(%)	Total fertility rate			Life expectancy		
				annual decline			annual increase
	1965–90	1965–70	1985–90	(%)	1965–70	1985–90	(month)
China	5.8	5.99	2.45	4.57	59.6	69.4	0.76
港	6.2	4.01	1.35	5.59	70.0	77.0	0.48
Japan	4.1	2.00	1.68	0.88	71.1	78.3	0.48
Korea, north	–	6.97	2.50	5.26	57.6	69.8	0.97
Korea, south	7.1	4.52	1.73	4.92	57.6	69.4	0.94
Mongolia	–	5.90	5.00	0.83	51.3	61.3	0.89
Taiwan	–	4.38	1.77	4.63	71.2	76.1	

Sources: World Population Prospects 1990. United Nations. New York 1991. Statistics Yearbook of The Republic Of China 1991. Republic of China

Table 3 Demographic Transition *, Degree of Industrialization **, Share of Urban Population in East Asia

	DT1 Index 1980	DT2 Index 1992	Indust. (%) 1990	Indust. (%) 1990	1989-2000 Population Growth Rate (%)
China	59.0	63.4	6.12	26	1.3
Hong Kong	66.8	92.6		94	0.8
Japan	73.8	93.7		77	0.3
Korea, North	43.6	70.0		60	
Korea, South	51.4	85.0	45.5	72	0.9
Mongolia	38.9	49.8		52	2.5
Taiwan	61.7	82.9	43.4	71	

DT Index 1= .4 ((8.0−TFR)/6.7)+.4 ((1−(78−e_o)/37)+.20 (U).

DT Index 2= $.3\left[\frac{8.0-TFR}{6.7}\right]+.3\left[\frac{78-e_o}{37}\right]+.2\,[ED]+.2\,[U]$

where TFR = total fertility rate, expectancy at birth, E0 = life expectancy at birth, ED = secondary school enrollment, and U = urbanization.

**Percentage share of GDP by industry.

Sources: Population Reference Bureau (1992). World Bank 1992. Asia 1992 yearbook.

Table 4 Distribution of GDP (%)

	Agriculture		Industry		Service	
	1965	1990	1965	1990	1965	1990
China	38	27	35	42	2	31
Hong kong	2	0	40	26	58	73
Japan	10	3	44	42	46	56
Korea, north	–	–	–	–	–	–
Korea, south	38	9	25	45	37	46
Mongolia	–	17	–	34	–	49
Taiwan	–	–	–	–	–	–

Sources: World Development Report 1992. World Bank.

Table 5 Labor Force Composition by Industry

	Percentage of labor force in						Women in labor force (% of total)
	Agriculture		Industry		Service		
	1965	1985–88	1965	1985–88	1965	1985–88	1988–89
China	81.0	73.7	8.0	13.6	11.0	12.7	45.2
Hong Kong	6.0	1.1	53.0	29.4	41.0	69.5	37.1
Japan	23.5	8.1	31.9	33.7	27.5	58.2	40.1
Korea, north	57.0	42.8	23.0	30.3	20.0	26.9	45.9
Korea, south	55.0	19.0	15.0	27.4	30.0	53.6	33.9
Mongolia	54.0	39.9	20.0	21.0	26.0	39.2	45.5
Taiwan	46.5	15.9	22.3	41.9	31.2	42.2	45.5

Sources: Human Development Report 1991. United Nation.
Statistical Yearbook 1991 of The Republic China. Republic of China.
Japan Statistical Yearbook (1990,1989 and 1979).

Table 6 Enrollment Rates in Secondary School and Higher Education in East Asia

	Secondary education				Tertiary education	
	Total		female		Total	
	1965	1989	1965	1989	1965	1989
China	24	44	–	38	0	2
Hong kong	29	73	25	75	5	–
Japan	82	96	81	97	13	31
Korea, north	–	–	–	–	–	–
Korea, south	35	86	25	84	6	38
Mongolia	66	–	66	–	8	–
Taiwan	–	–	–	–	–	–

Sources: World Development Report 1992. World Bank.

Chapter Four

DEMOGRAPHIC TRANSITION AND INDUSTRIAL CHANGE IN SOUTHEAST ASIA

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The pace of fertility decline in Southeast Asia has accelerated in recent years, particularly in such large countries as Indonesia and Thailand, and the region appears to be second following East Asia in completing the demographic transition in the foreseeable future. Some countries in the region also shown a remarkably rapid industrial transition, especially during the 1980s. This transition was facilitated by increased inflows of direct foreign investment which were of particular importance in stimulating growth of export industries. While the availability of cheap labor in Southeast Asia in the 1980s were certainly conducive to the increased flows of capital into the countries of Southeast Asia, increased cross-national interactions through trade, investment, and migration may be attributable largely to the demographic diversity and different stages of economic development existent in Asia may have further expedited their demographic and industrial transitions.

In this paper, it is argued that a growing regional economic interdependence in Asia promotes rapid industrial changes, necessitating individual countries to adjust constantly to changing comparative advantages. For developing countries, this implies a need to restructure their industries more swiftly than developed countries did in the earlier periods.

The next section provides a brief review of recent economic and demographic changes in Southeast Asia. The relationship between demographic and industrial transitions will then be sketched. To help understand cross-national impact of demographic/economic interactions, recent trends of growing economic interdependence in Asia will be briefly reviewed. Changing industrial structures in response to each country's human resource endowment will be examined for the selected countries of Southeast Asia. Finally, the prospects for industrial transition in these countries will be discussed.

1 Demographic and Industrial Change in Southeast Asia

With a combined population of over 450 million, Southeast Asia has a larger population than the European Community and almost equal to that of Latin America. It consists of countries with different stages of economic and demographic transition. Myanmar and the Indochinese states--Cambodia, Laos, and Vietnam--are still in the lowest end of scale and process. Singapore which has completed its demographic transition is the most affluent economy in the region, with a per capita GNP of over $12,000 (Bauer and Mason, 1990). In between are Thailand, Malaysia, and the Philippines. Although Indonesia is placed in the low income category, it is rapidly catching up with its middle-income neighbors.

On average, the total fertility rate for Southeast Asia in 1992 was 3.4 births per woman (Table 1). Even though this figure is higher than East Asia, it is one birth per woman below the total fertility rate for South Asia. Fertility in Thailand has shown a rapid decline and it is ap-

proaching replacement-level fertility. Malaysia and Indonesia are not far behind Thailand, despite the fact that Malaysia has adopted a pro-natalist policy. However, the Indochinese states and the Philippines where fertility rates are still high, continued rapid population growth will pose challenges of generating sufficient productive employment and industrial transformation.

With the exceptions of the Philippines and the Indochinese states, all Southeast Asian countries experienced average annual rates of per capita GNP growth of 4 percent and more during the 1965-90 period (Table 2). These rates are higher than the average growth rates of all developing and developed economies (except for Asian NIEs).

In parallel with such remarkable economic growth, rapid demographic changes have taken place in several of the large Southeast Asian countries. The total fertility rate declined by an annual rate of 4.4 percent in Thailand, 3.3 percent in Singapore, 2.4 percent in Indonesia, and 2 percent in Malaysia between the two periods of 1965-70 and 1985-90 (Table 2). While the fertility declines in these countries were not as dramatic as in the East Asian countries of Japan, China, and South Korea, it was faster than that of South Asia, Latin America, and Africa.

Substantial marital postponement and, more importantly, reductions in marital fertility accounted for fertility declines in Thailand, Singapore, Indonesia, and Malaysia (Hirschman and Guest, 1990). In contrast, fertility declines in the Indochinese states, Myanmar and the Philippines have been relatively small, indicating that these countries are still in the early stage of their demographic transition.

During the twenty-year period (1965-70/1985-90), life expectancy increased by more than ten years for all the Southeast Asian countries except for Cambodia where the average expectation of life at birth is still below 50. Indonesia, Vietnam, and Malaysia experienced an increase in average life expectancy of more than ten years during the twenty-year period.

Rapid economic growth in parts of Southeast Asia was largely led by industrial growth, especially by manufactured exports (World Bank, 1992). For example, Indonesia's manufacturing sector grew by more than 12 percent per annum during the period from 1965 to 1990. Over the same period, Thailand experienced a rate of industrial growth of more than 9 percent and Malaysia was not far behind. Singapore recorded a rapid manufacturing growth until 1980 (over 13 percent per annum) but more recently experienced slower manufacturing growth due to the shift of its economic structure away from manufacturing to producer services. The Philippines has been lagging behind these rapidly developing economies.

The rapid industrial growth in Thailand, Malaysia, Singapore, and Indonesia has brought sectoral transformation of the economies. Table 3 summarizes the changes in sectoral distribution of their GDP. Industrial transition has been most rapid in Indonesia, followed by Malaysia and Thailand. Singapore, the most advanced economy in Southeast Asia, has been

moving away from an industry-based economy to a service-based economy, particularly during the 1980s (Kim, 1993). In terms of the sectoral distribution of GDP, the Indochinese states and Myanmar are still dominated by agriculture and are the least advanced in terms of their industrial transition. The Philippines, which has been sluggish in its transition to an industrial economy, still faces the task of transforming its economy toward an industry-oriented structure, whereas Indonesia, Malaysia, and Thailand are likely to continue their rapid industrial transition during this decade.

2 Interactions between Demographic and Industrial Transitions

To explain the dynamic economic growth in East Asia, Cho and Fujioka (1985) developed a model, maintaing that interactions between the demographic and industrial transition between as well as within each nation can provide for more dynamic growth in the region. The major factors contributing to this dynamism in the Asia-Pacific region are: (1) the economic and demographic diversity which makes the interaction possible and advantageous for those countries involved, (2) the relatively close geographical proximity, and (3) a cultural affinity stressing the virtues of education, competitiveness, and achievement (Cho and Fujioka, 1985).

The relation between demographic and economic changes has long been studied by demographers and economists. Attempts have been made to develop a theory of demographic transition characterized by the process of changing from a high fertility and mortality population to a low fertility and mortality population and accompanied or followed by social and economic development including education, industrialization and urbanization. While the demographic transition framework appears sound in establishing the link between demographic transition and general socio-economic development, it has been unable to provide a testable theory of the causes of the transition from high to low fertility levels (Caldwell, 1976). Also, it has been criticized because it largely ignores the role of cultural differences in hastening and impeding fertility decline (Coale, 1973). While the importance of social and economic change in establishing conditions for fertility to decline is clear, a two-way interaction between demographic and industrial transitions is more acceptable than a unilateral influence of scio-economic development on demographic behavior (Asian Population and Development Association, 1989).

In Asia, we have seen that demographic transition is associated with the attainment of full employment with rising wages, the quick spread of mechanization, the acceleration of family incomes and savings, and substantial structural changes (Oshima, 1987). According to Oshima, as per capita income increases, aggregate demand for industrial products rises, urban employment opportunities open up, and soon full employment is reached. The progress in

mechanization leads to an increase in the demand for more skilled and educated labor and therefore calls for an increase in secondary education. Increased education, in turn, leads to more rapid fertility decline and subsequently completion of demographic transition. Oshima considers secondary education, especially of lower-income families, as a main link between industrial and demographic transitions.

In Southeast Asia, the spread of secondary and higher education has been rapid during the past three decades (Table 4). The growth in the percentage of the relevant age group in secondary education has been remarkable in Indonesia, while its growth in Malaysia and the Philippines has not been insignificant (Table 4). Even in the less developed Indochinese states such as Laos and Vietnam, the increased rate of participation in secondary education was noticeable. Thailand also made significant strides in its enrollment rates in higher education. Interestingly, the rise in the educational level of the population in the region has been shared by the female population in a greater proportion, which is closely corresponding to export-oriented manufacturing growth that has absorbed an increasing proportion of the female labor force in some of these countries. The trend of feminization of the manufacturing labor force has been strongest in export processing zones in Southeast Asia (Sassen, 1988; Edgren, 1990; Manning and Pang, 1990). This picture, however, is changing because the women increasingly refuse to leave the labor force after just a few years of work and because of growing unionization and changing organization. With a rising demand for female labor in the emerging industrial economies of Southeast Asia, more women will stay in the labor force and the bias against women will be gradually reduced (Edgren, 1990).

A negative association between education and fertility is commonly found both in cross-sections and time-series data, although the causal mechanisms remain elusive (Oshima, 1987). The spread of secondary education is a response to the labor force requirements of a mechanized society, which in turn is a major factor exerting a downward pressure on fertility. The rise in female labor force participation rates together with rising female earnings make the opportunity cost of bearing and rearing children higher and thus reduces the fertility rate (Oshima, 1987; Todaro, 1985). In Southeast Asia, a positive association between rising educational levels and rising women's labor force participation rates is apparent (Tables 4 and 5). The increase in the female labor force participation rates was significant amongst the ASIAN countries and, in particular, in Singapore where the participation rate doubled from 19 percent in 1970 to 38 percent in 1989, reflecting the country's tight labor market situation in the 1970s and 1980s. The increase was understandably small in Thailand; the country has always had an unusually high female labor force participation rate.

The increased labor force participation of women has been closely related with the industrial transition of Thailand, Malaysia, Indonesia and Singapore. Except in the Philippines, where industrial growth was relatively slow in the past two decades, women's employment in

nonagricultural activities has greatly increased (Table 6). Indeed, the occupational distribution of women has changed rapidly in countries like Singapore, Malaysia and Thailand, where women's share of employment in agriculture has dropped and their share in nonagricultural employment has increased.

This occupational transition is partly a reflection of industrial transition and urbanization. For example, the proportion of the labor force that was working in agriculture declined by more than 15 percentage points in Malaysia, Indonesia, and the Philippines between 1965 and 1985-88 (Table 7). Although the pace of industrial transition in Thailand has been rapid, its level of industrialization is still high due to its large agricultural labor force in rural areas. The situation in the Indochinese states and Myanmar is different from ASEAN countries. They still have a large labor force employed in agriculture. The percentage of women in the labor force appears to be positively associated with the share of agriculture in the total employment. Although as a country reaches an advanced stage of industrial and demographic transitions, such a pattern disappears because more women are involved in nonagricultural activities.

As the labor force moves from agriculture to industry, there is a parallel shift from rural to urban society, with all the attendant implications in social, cultural, and political life. In addition, the shift away from agriculture reduces the number of peasants and landless workers, who have the largest family size and the lowest incomes. Structural shifts within each major sector and within the economy as a whole are from proprietary to corporate enterprises, from smaller farms to larger farms and firms, and from less skilled to more skilled occupations, all of which tend to reduce the desired family size. There is a statistically significant relationship between income per capita and the fraction of wage earners (Schultz, 1990). This relationship is reported to be particularly important within sectors except in agriculture. Table 8 shows the process of incorporating labor into wage employment. With the exception of the Philippines, "employees" category has increased substantially between the years given in the table. It is, however, difficult to interpret the increase in the share of "unpaid family workers" category in Malaysia. If we assume that countries take an evolutionary path in occupational transition, Singapore could serve as an example. In this respect, Thailand is far behind other countries in the process of occupational transition.

3 Regional Interdependence and Structural Changes

In the 1980s, the Asian economies have become increasingly interdependent through the flows of capital, labor, and trade (Grosser and Bridges, 1990). This shift to an intra-Asia focus was apparent beginning in 1986, with the result that Asia has become its own most important and most rapidly expanding market. The change was largely due to currency realign-

ments, following the Plaza Accord in 1985, and the shifting comparative advantages in the region. Intra-Asian exports grew at a rate of 23 percent during 1986-89 and they made up about 39 percent of total exports of the region (Asian Development Bank, 1991).[1]

Asian economies have also become increasingly integrated through direct foreign investment (Table 9). Japan, which completed its demographic transition in the 1950s, has been the main source of direct foreign investment in Asia. The Asian NIEs that are about to complete their demographic transitions have also become major investors in export-oriented, labor-intensive manufacturing in Southeast Asia.

As Asian economies grew rapidly in the 1980s, Asian workers have been increasingly mobile, looking for better paying job opportunities in the region. This is particularly true for those in Southeast Asia. In 1980, just under 25,000 Asian contract workers found employment in other countries in the region. By 1991, this figure had increased to over 228,000, not including a large number of clandestine migrants (Stahl, 1992). The pronounced spatial differentials in earnings and employment opportunities point to a further substantial rise in labor movement within the region. Japan and the NIEs are becoming major destination countries for low-income workers in Asia. Even with its restrictive migration policy, Japan has been attracting a large number of migrant workers. Unofficial estimates place the number as high as 300,000 (Stahl, 1992). Hong Kong, among the NIEs, has absorbed the largest number of migrant workers. Singapore has also been reliant on the inflow of foreign workers to meet much of its demand for less-skilled workers and, more recently, Taiwan and South Korea have experienced major influxes. As intra-regional migration increases, more migrant workers are leaving from economically and demographically less advanced countries, in particular, the Philippines, Indonesia, Thailand, and Malaysia in Southeast Asia (Skeldon, 1992). These international migration streams appear to be associated with the aforementioned flows of direct foreign investment, although the relationship needs to be empirically tested.

Given the importance of factor mobility and trade in Asia, Cho and Martin (1990) argue that it is not unreasonable to expect that the experiences of neighboring countries affect each other, including fertility behavior. For example, as one country's population growth rate slows and its economy grows faster, it may increasingly look to a neighboring country that is further behind demographically and economically as a source of cheap labor and good investment opportunities. In less demographically advanced countries receiving additional investment, several events take place which directly and indirectly affect the pace of demographic transition. In both the agricultural and industrial sectors, capital import raises the marginal product of labor, and employment and labor productivity begin to rise. Women's labor force participation will tend to increase as more job opportunities are available for women and wages grow. Increased female wages and job opportunities outside the home lead to an increase in the opportunity cost of rearing children. To respond to changing demand for more skilled labor, parents

invest more in the education of their children; quality of children rather than their quantity becomes more important. Thus, fertility will fall as educational attainment rises. This cross-national interaction will spread in a region, creating ripple effects. Therefore, continuing demographic diversity and factor mobility augur well for future demographic and economic changes in those parts of Asia that are further behind in their demographic and industrial transitions.

The key link to this cross-national interaction between demographic and industrial transitions is through labor supply and demand. In Japan and Asian NIEs, where fertility declines were rapid, labor force growth rates have already slowed. These shortages will push labor costs higher, causing further industrial restructuring in response to changing comparative advantage. The changing comparative advantages will promote the flows of capital from labor-deficit economies to labor-abundant economies.

Singapore, the most advanced country in Southeast Asia, has found it increasingly difficult to maintain its comparative advantage in labor-intensive exports and since the late 1970s has been actively pursuing a policy of industrial restructuring directed at shifting the manufacturing sector toward more skill-intensive activities. An important part of this restructuring program has been the enhancement of the educational and skill levels of the workforce. While Thailand, Malaysia, Indonesia and the Philippines continue to rely on unskilled labor-intensive exports, they are aware that this phase of growth will be of limited duration, much shorter than that the NIEs enjoyed in the 1960s and 1970s. Anticipating the erosion of their comparative advantage by other low-wage economies, including neighboring countries of Vietnam, Laos, and Cambodia, these countries have also adopted programs of upgrading labor force skills which it is hoped will facilitate the transition from labor-intensive to skill-intensive activities (Chowdhury and Kirkpatrick, 1990).

Human resource endowment, as measured by the education and skills of the labor force, has been rising in Southeast Asia, particularly in ASEAN countries. The increase bewteen 1965 and 1989 in the number enrolled in higher education as a percentage of population aged 20-24 is pronounced in Thailand (Table 4). In the secondary education category, most countries in Southeast Asia have experienced substantial increases. Indonesia, Malaysia, and the Philippines have made significant strides in secondary education, in particular, the secondary education of the female population. Certainly, these increases in education and skill levels broadly reflect the process of industrial transition but more narrowly a response to changing comparative advantage in manufacturing industry. With the increase in the supply of skilled labor, the industrial structure will become more skill-intensive and the skill orientation of manufactured exports should increase (Chowdhury and Kirkpatrick, 1990).

Table 10 shows the changes in average skill-intensity of the manufacturing sector in selected Southeast Asian countries during the 1970s and the 1980s. Skill intensity as measured

by earnings per employee, has risen in all the countries with the exception of the Philippines in the 1970s. The increase in earnings per employee in the 1980s was most pronounced in Thailand and the Philippines, Indonesia, with Malaysia following closely. This trend has been associated with the inflow of direct foreign investment in these countries. The rapid economic growth and the shift toward a skill-intensive economy in Singapore generated a growing demand for skilled and professional workers.

The evidence presented above suggests that there have been significant inter-industry shifts in the relative skill intensity of activities in the manufacturing sector in ASEAN, although the pattern has not been uniform across countries or industries. While a variety of factors including changes in relative prices of inputs and products have been responsible for those shifts in the manufacturing sector, demographic changes, including the increased supply of more skilled labor, have also contributed to the shifts.

An examination of the possible impact of the changing human resource endowment on the composition of manufactured exports in ASEAN countries, where industrial statistics are available, suggests that, to varying degrees, the manufacturing sectors in ASEAN have more skill- or human capital-intensive orientation (Chowdhury and Kirkpatrick, 1990). The Philippines, however, is still the most heavily dependent on labor-intensive manufactured exports and the development of skill- and technology-intensive industries is limited (Table 11). Singapore's manufacturing, on the other hand, has become increasingly capital and skilled-labor intensive. Malaysia's manufacturing sector became more capital and technology-intensive, although it still retains a large proportion of labor-intensive manufacturing activities. In Thailand, the relative share of labor-intensive exports have increased significantly over the decade of the 1980s. However, Thailand has also experienced a growth in technology-intensive and capital-intensive manufacturing.

In sum, demographic changes in Southeast Asia have resulted in significant industrial shifts through both quantitative and qualitative changes in the labor force. Transnational capital movements and international trade, responding to comparative advantage which, in turn, depends on a country's factor endowment, including, more importantly, human resources, have brought about significant changes in the industrial structures of Thailand, Malaysia, and Indonesia and have, in turn, started to have an effect on the Indochinese states, the Philippines, and Myanmar that are lagging behind in demographic and economic development.

4 Prospects

The countries of Asia began their demographic transitions at different times and have made varying degrees of progress toward lower fertility and mortality. Demographic diversity

together with a growing economic interdependence in Asia has facilitated interactions between demographic and industrial transitions within and between countries. In particular, Southeast Asian countries, especially Malaysia, Thailand, and Indonesia, have become the locus of such cross-national interactions. Also, this process has recently extended to the Indochinese states and Myanmar.

Rapid expansion in the numbers of educated people, especially at secondary level, has been an important feature of labor supply development in several Southeast Asian countries. The problem of rapid generation of more skilled manpower has recently been highlighted in Thailand as it makes the transition from a producer of primary commodities to a producer of largely manufactured goods. Thailand has the lowest rate of secondary school enrollment among the ASEAN countries and needs to upgrade the skill and educational levels of its labor force to meet changing labor demand. Other demographically less advanced countries in Southeast Asia are also likely to encounter the problem of their education system responding quickly to new needs which accompany the industrial transition process.

As shown in Table 12, Singapore has more or less completed its demographic and industrial transition, whereas Indonesia and Malaysia are currently in a rapid transition phase. Although Thailand is rapidly advancing in its demographic transition, it faces a difficult task of transforming its still a rural-agrarian society into a fully urban-industrial society. Vietnam, which recently has been experiencing an inflow of direct foreign investment, faces more or less the same task as in Thailand. While in some respects the Philippines is more advanced than the countries mentioned above, it must reduce the growth rate of its population. Cambodia, Laos, and Myanmar are still in early stages or in less developed stages, but are expected to proceed with their demographic and industrial transitions in the next few decades.

In those less demographically advanced countries in Southeast Asia, where fertility declines have been modest, continued rapid labor force growth will be the rule for decades. The challenge of generating sufficient productive employment will be greater. Consequently, the Indochinese states, Indonesia and the Philippines will continue to have a comparative advantage in low-wage, labor-intensive production for the next decade (Bauer, 1990).

In these countries, rapid population growth in the past has resulted in high labor-to-land ratio. Agricultural densities in the region are by far the highest in the world. Given current land constraints and technologies, the ability of the agricultural sectors in these countries to absorb additions to the labor force, without inducing declines in labor productivity, is very limited (Bauer, 1990). This does not imply, however, that the agricultural sector can be ignored. The expansion of rural employment opportunities through promotion of labor-intensive industries and agricultural diversification, coupled with human development parameters in the areas of health, education, and family planning deserves high priority in most Southeast Asian countries.

In contrast to more or less homogeneous regions such as the European Community and North America, there exists demographic, economic, and ethnic diversity in Southeast Asia. As argued by Cho and Fujioka (1985), such diversity has provided and will continue to provide stimulus to demographic and economic development of the countries involved. Furthermore, geographical proximity in Southeast Asia, particularly within the ASEAN framework, contributes positively to the interactions among the countries involved as can be seen in the growth triangle of Singapore, Johor of Malaysia, and Batam of Indonesia. Cultural affinity existent between Southeast Asian countries is expected to further promote cross-national business and social interactions. Although Southeast Asia did not experience a direct impact as did the countries of East Asia, the region was nevertheless affected by the Chinese or East-Asian culture and system of values. The Chinese play a pre-eminent in trade and commerce of the society even though they are clearly the minority in Southeast Asia. This "Chinese ethos" emphasizing the importance of education, achievement motivation, frugality, and competitiveness will facilitate the development and spread of entrepreneurship throughout the region.

5 Policy Implications

Slower labor force growth and rapid industrialization will begin to change the comparative advantage of the more demographically advanced countries in Southeast Asia more rapidly than experienced by developed countries and even the Asian NIEs. The government and industry should prepare the way, especially through education, for the changes in comparative advantage that will take place. Industry needs to upgrade its technological level to compete on grounds other than low production costs (Castells, 1989). The industrial transition and, more narrowly, industrial restructuring in these countries should be considered in the context of the interdependent regional and world economy.

Growing regional interdependence in Asia will continue to exert a strong influence on individual countries' industrial structure through increased trade and capital flows. This also means there will be increasing competition among the countries in the region. Needless to say, the human resource base is one of the key factors strengthening the competitive position of a country. Policies and measures to improve the quality of labor force in addition to traditional population policies merit a serious attention in the countries of Southeast Asia.

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Note

1) Intra-Asian export figures include South Asia, although South Asia's trade with other Asian countries takes a small proportion of the total intra-Asian trade.

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Table 1 Demographic and Economic Indicators of Southeast Asia, 1992

	Population (millions)	Total fertility rate	Population urban (%)	GNP per capita (US$)
Indonesia	184.5	3.0	31	560
Malaysia	18.7	3.6	35	2,340
Philippines	63.7	4.1	43	730
Singapore	2.8	1.8	100	12,310
Thailand	56.3	2.4	18	1,420
Cambodia	9.1	4.5	13	190
Laos	4.4	6.8	16	156
Myanmar	42.5	3.9	24	195
Vietnam	69.2	4.0	20	200
Southeast Asia	451	3.4	29	---
East Asia	1,386	2.1	34	2,910

Sources: Population Reference Bureau (1992) and Far Eastern Economic Review (1992)

Table 2 Per Capita GNP Growth Rates, Total Fertility Rates and Life Expectancy

	Per capita GNP growth rate (%) 1965-90	Total fertility rate			Life expectancy		
		1965-70	1985-90	Annual decline (%) 1965-70/1985-90	1965-70	1985-90	Annual increase (months) 1965-70/1985-90
Indonesia	4.5	5.57	3.48	2.4	46.0	60.2	8.5
Malaysia	4.0	5.94	4.00	2.0	59.4	69.5	6.1
Philippines	1.3	6.04	4.33	1.7	56.2	63.5	4.4
Singapore	6.5	3.46	1.80	3.3	67.9	73.5	3.4
Thailand	4.4	6.14	2.60	4.4	56.7	65.0	5.0
Cambodia	na	6.22	4.71	1.4	45.4	48.5	1.9
Laos	na	6.15	6.69	[0.4]	40.4	48.5	4.9
Myanmar	na	5.74	4.02	1.8	49.5	60.0	6.3
Vietnam	na	5.94	4.10	1.9	47.9	61.5	8.2
Southeast Asia	na	5.79	3.68	2.3	49.7	60.9	6.7
East Asia	na	5.40	2.36	4.2	61.1	70.4	5.6

na: not available
[ ]: means increase

Source: United Nations (1991)

Table 3 Distribution of GDP

%

	Agriculture		Industry		Services	
	1970	1990	1970	1990	1970	1990
Indonesia	46.0	19.7	20.9	40.6	33.1	39.6
Malaysia	32.0	19.4	24.7	41.7	43.3	38.9
Philippines	28.8	26.9	29.4	33.0	41.8	40.1
Singapore	2.3	0.3	29.8	35.9	67.9	63.8
Thailand	30.2	14.2	25.7	35.3	44.1	50.1
Laos	na	55.1	na	17.8	na	25.7
Myanmar	38.3	49.6	14.7	12.2	47.0	37.6
Vietnam	na	49.6	na	31.6	na	21.6

na: not available

Source: Asian Development Bank (1991)

Table 4 Enrollment Rates in Secondary Schools and Higher Education in Southeast Asia

	Secondary education				Tertiary education	
	Total		Female		Total	
	1965	1989	1965	1989	1965	1989
Indonesia	12	47	7	43	1	na
Malaysia	28	59	22	59	2	7
Philippines	41	73	40	75	19	28
Singapore	45	69	41	71	10	na
Thailand	14	28	11	na	2	16
Cambodia	9	na	4	na	1	na
Laos	2	27	1	22	0	2
Myanmar	15	24	11	23	1	5
Vietnam	na	na	na	na	na	na

na: not available

Source: World Bank (1992)

Table 3 Distribution of GDP

%

	Agriculture		Industry		Services	
	1970	1990	1970	1990	1970	1990
Indonesia	46.0	19.7	20.9	40.6	33.1	39.6
Malaysia	32.0	19.4	24.7	41.7	43.3	38.9
Philippines	28.8	26.9	29.4	33.0	41.8	40.1
Singapore	2.3	0.3	29.8	35.9	67.9	63.8
Thailand	30.2	14.2	25.7	35.3	44.1	50.1
Laos	na	55.1	na	17.8	na	25.7
Myanmar	38.3	49.6	14.7	12.2	47.0	37.6
Vietnam	na	49.6	na	31.6	na	21.6

na: not available

Source: Asian Development Bank (1991)

Table 4 Enrollment Rates in Secondary Schools and Higher Education in Southeast Asia

	Secondary education				Tertiary education	
	Total		Female		Total	
	1965	1989	1965	1989	1965	1989
Indonesia	12	47	7	43	1	na
Malaysia	28	59	22	59	2	7
Philippines	41	73	40	75	19	28
Singapore	45	69	41	71	10	na
Thailand	14	28	11	na	2	16
Cambodia	9	na	4	na	1	na
Laos	2	27	1	22	0	2
Myanmar	15	24	11	23	1	5
Vietnam	na	na	na	na	na	na

na: not available

Source: World Bank (1992)

Table 5 Changes in Labor Force Participation Rates in Selected Southeast Asian Countries*

	Total	Male	Female
Indonesia			
1971	34.9	47.3	22.8
1989	42.6	51.2	34.0
Malaysia**			
1970	32.6	44.2	20.9
1987	43.8	56.5	31.1
Philippines			
1970	33.5	45.9	21.3
1990	40.9	51.1	31.4
Singapore			
1970	35.0	50.8	18.5
1989	48.6	59.6	37.8
Thailand			
1970	49.0	52.0	46.0
1988	55.7	59.1	52.3

*The base for computation is population aged 10 years old and above except Thailand, where population aged 11 years old and above is used.

**1970 includes only peninsular Malaysia, while 1987 figures are for all of Malaysia.

Source: International Labour Office (1991).

Table 6 Women's Employment Share in Agricultural and Nonagricultural Activities in Selected Southeast Asian Countries (%)

	Agriculture	Nonagricultural Activities
Indonesia		
1971	32.0	32.3
1989	40.5	39.2
Malaysia		
1980	38.3	28.8
1987	35.3	35.4
Philippines		
1970	19.5	44.5
1990	25.2	45.5
Singapore		
1970	35.0	16.3
1989	16.7	39.7
Thailand		
1970	49.7	38.2
1988	47.4	45.2

Sources: International Labour Office (1990 and 1991).

Table 7 Labor Force Composition by Industry

	Percentage of labor force in						Women in labor force (% of total)
	Agriculture		Industry		Services		
	1965	1985-88	1965	1985-88	1965	1985-88	1988-89
Indonesia	71.0	54.4	9.0	8.0	21.0	37.6	34.3
Philippines	58.0	43.4	16.0	9.7	26.0	46.9	31.6
Thailand	82.0	72.4	5.0	5.9	13.0	21.7	45.1
Malaysia	59.0	41.6	13.0	19.1	29.0	39.3	31.1
Singapore	6.0	0.4	27.0	28.4	68.0	71.2	37.8
Cambodia	80.0	74.4	4.0	6.7	16.0	18.9	39.2
Laos	81.0	75.7	5.0	7.1	15.0	17.2	44.7
Myanmar	64.0	63.9	14.0	9.1	23.0	27.0	37.4
Vietnam	79.0	67.5	6.0	11.8	15.0	20.7	46.9

Source: United Nations Development Programme (1991).

Table 8 Changes in Employment Status by Sex

(%)

	Employers and own-account workers		Employees		Unpaid family workers	
	Male	Female	Male	Female	Male	Female
Indonesia						
1971	44.9	29.3	35.4	28.2	18.1	39.8
1990	22.1	16.5	64.0	45.1	10.9	34.1
Malaysia						
1980	31.5	24.7	58.6	54.5	4.7	10.9
1987	28.3	16.8	64.3	59.6	7.5	23.6
Philippines						
1970	42.7	23.3	39.4	41.0	15.1	27.0
1990	39.3	28.1	42.4	41.2	11.1	20.9
Singapore						
1970	21.0	8.6	68.6	68.4	2.6	5.3
1989	17.2	5.8	79.9	89.5	0.5	2.7
Thailand						
1970	45.4	12.0	19.9	10.4	32.6	76.0
1988	40.3	16.8	28.8	23.6	28.2	56.0

Sources: International Labour Office (1990 and 1991) and Government of Indonesia (1992).

Table 9 Direct Foreign Investment in Southeast Asia and China, 1986-89

US$ million

To	Indonesia		Malaysia		Philippines		Thailand		China	
From	Aver. of 1986-88	1989	Aver. of 1986-88	1989	Aver. of 1986-88	1989	Aver. of 1986-88	1989	Aver. of 1986-88	1989
Japan	369	769	265	993	49	158	1,522	3,524	262	439
NIEs	663	1,197	315	1,335	63	323	815	2,012	3,146	3,719
Korea	78	466	7	70	1	17	41	171	5	11
Taiwan	312	158	139	797	40	149	406	868	310*	437
Hong Kong	157	407	57	130	21	133	211	562	2,707*	3,160
Singapore	116	166	112	338	1	24	157	411	124	111
Asia	1,032	1,966	580	2,328	112	481	2,337	5,536	2,731	3,850
World	2,231	4,719	1,112	3,194	239	804	3,279	7,996	3,947	5,600

* = average of 1987-88

Sources: Asian Development Bank (1991) except for China
China Foreign Economic Relations and Trade (1990).

Table 10 Growth Rates in Manufacturing Earnings Per Employee

%

	1970-80	1980-89
Indonesia	5.0	5.9
Malaysia	2.0	3.2
Philippines	-3.7	6.4
Singapore	3.0	5.0
Thailand	1.0	6.5

Source: World Bank (1992).

Table 11 Manufacturing Composition in Selected Southeast Asian Countries

(%)

	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	1980	1989	1980	1989	1980	1989	1989	1989	1989	1989
Food, Beverages & Tobacco	24.6	20.3	24.2	18.6	30.3	40.7	5.0	4.7	30.2	26.6
Textiles, Apparel Leather & Footwear	10.6	11.9	7.3	6.7	12.8	9.0	5.5	3.8	17.0	18.4
Wood, Wood Products & Furniture	5.6	9.7	11.6	7.0	6.3	2.7	3.2	1.5	4.1	3.0
Paper, Paper Products Printing & Publishing	2.3	2.9	5.0	4.3	4.5	4.1	4.4	5.6	4.7	3.7
Chemicals, Chemical-related Products	35.5	30.8	17.9	26.0	24.7	26.4	24.8	19.8	16.3	20.0
Non-metallic Minerals	5.6	4.2	5.7	6.2	2.8	2.8	2.3	1.3	3.7	4.1
Iron and Steel, Non-ferrous Metals	2.4	7.8	3.2	3.4	2.7	3.9	1.8	1.2	4.8	2.3
Metal Products & Machinery	13.0	12.1	24.5	26.9	14.9	9.6	51.3	60.7	14.9	14.3
Other Manufacturing	0.3	0.3	0.7	0.8	1.0	0.8	1.6	1.4	4.4	7.5
Manufacturing Share of GDP	13.0	17.9	20.6	22.7	24.4	24.6	29.1	28.4	21.3	23.2

Source: United Nations Industrial Development Organization (1991)

Table 12 Demographic Transition*, Degree of Industrialization**, Share of Urban Population, and Projected Population Growth Rates in Southeast Asia

	1992 DT Index 1	1992 DT Index 2	1990 Industrialization (%)	1992 Urbanization (%)	1989-2000 Population growth rates (%)
Singapore	.92	.93	35.9	100	1.2
Malaysia	.73	.65	41.7	35	2.3
Thailand	.77	.66	35.3	18	1.4
Indonesia	.64	.57	40.6	31	1.6
Philippines	.62	.57	33.0	43	1.8
Vietnam	.61	.53	31.6	20	2.1
Myanmar	.54	.48	12.2	24	2.0
Cambodia	.37	.32	--	13	1.9
Laos	.21	.20	17.8	16	3.2
Southeast Asia	.63	.56	--	29	--
East Asia	.85	.74	--	34	--

*DT index 1 = 0.5 [(8.0-TFR)/6.7] + 0.5 [1 - (78-e_0)/37], where TFR = total fertility rate and e_0 = life expectancy at birth. Maximum and minimum values of TFR [8.0,1.3] and e_0 [78,41] among all countries of the world were used to standardize these values. DT index 2 = .4 [(8.0-TFR)/6.7] + .4 [1-(78-e_0)/37] + .2 (u), where u = level of urbanization.

**Percentage share of GDP by industry.

Sources: Population Reference Bureau (1992)
World Bank (1992)

Chapter Five

INDUSTRIAL TRANSITION AND LABOR MIGRATION IN CHINA

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Introduction

The inter-regional population migration discussed in this chapter includes both population migration between urban and rural areas and also between provinces. As we can see from the stage of development which China is currently in, the migration of labor between industries consists mainly of the move of agricultural workers away from agriculture. China's current economic structure is a typical "dual economy" structure, and as such migration of labor between industries cannot be separated from migration of labor between urban and rural areas. In this chapter we will first study population migration between urban and rural areas and the migration of labor between industries, then discuss the development of tertiary industries. Finally we will look at the migration of population between provinces and inter-regional economic development.

1 Labor Migration Between Urban and Rural Areas and the Move of Agricultural Labor Away From Agriculture

Like in other developing countries, population migration between urban and rural areas accounts for the dominant portion of population migration in China. In order to understand the urbanization of the population and the move of the agricultural labor force away from agriculture in China today, we should first look back on the unique history of the urbanization of the population in China.

During the period, from 1949 when the People's Republic of China was established to 1980 just after the adoption of new economic system, the percentage of the urban population rose from 10.6% to 19.39%. However, all of this increase of 8.79 points took place before the end of the 1950s (refer to Table 1). From 1950 to 1980, the urban population in China increased at an average annual rate of 3.3%, and the non-agricultural population within urban areas increased at an even lower rate (2.6%). This is far lower than the average rate of increase of the urban population in developing countries as a whole during this same period (4.3%). According to calculations by Victor Sit (1985), from 1949 to 1981, the population migration between urban and rural areas only contributed 20% to the rise in China's urban population. The migration of labor between industries during this period was also slow, and by 1980 China's agricultural population had reached 83% of the total population. It should be noted that this slow growth of China's urban population and the stagnation of the percentage of the urban population within the total population occurred under the circumstances that

there was an extremely large gap between urban and rural areas in such fields as income, consumption, and others. In other words, there was a strong "push" factor from rural areas and a strong "pull" factor exerted by urban areas. Ever since its foundation, China has walked the path of prioritizing the development of industry, in particular heavy industry, and this was done by having agriculture pay the expenses of industrial development. A difference is that while the Soviet Union imposed high agricultural taxes, China kept the price of agricultural products low and transferred the surplus of agriculture to the industrial sector through price disparity policy which raised the price of industrial products. During the first several years after this policy was instituted, the gap between urban and rural areas widened, so there was mass migration of rural populations to cities, and this was the period in which the share of the urban population rose fastest since China's foundation. Agricultural production was greatly affected by this massive migration of the rural population to cities. Because of this, after the major frustration of the "Great Leap Forward" in 1958, China came to adopt a policy strongly restricting the migration of the rural population to urban areas and the shift of the agricultural population into a non-agricultural population. This policy was continued through the initial periods of economic reform after 1978, and a vast surplus agricultural labor force was accumulated.

The migration of population between urban and rural areas and the labor mobility from agriculture to non-agriculture after 1978 should be divided into two stages, before and after the urban economic reforms of 1984.

After the rural economic reforms of 1978, a profound change took place in China's agriculture. During the three years from 1979 to 1981, agricultural production calculated in comparable constant prices rose at an annual average rate of 9.65%, far surpassing the 3.25% average level from 1952 to 1978. At the same time, the until then latent surplus agricultural labor force surfaced. With the promotion of the rural economic reforms, the conditions for mobility of the agricultural labor force into non-agricultural activities were ready. However, before 1984 China had not yet begun urban economic reforms and the migration of the agricultural population to urban areas was still rigorously restricted. With the double pressure of the surplus agricultural labor force and the fact that cities could not provide new jobs, the new framework of the town-village owned enterprises particular to China was initiated. At this time, the transition of the surplus agricultural labor force was limited to the non-agricultural industries in rural areas, in other words the town-village owned enterprises, and the surplus agricultural labor force finding employment in urban areas was limited to only approximately 10% of the total labor force moved out from agriculture (refer to Table 2).

The strong development of agriculture in China after 1978 was due mainly to the success of the rural reforms. Though there was no remarkable improvement in agricultural production technologies in the short term, the reforms of the economic system brought to the

surface the surplus labor force which for many years had been hidden in rural areas. With this, a new transition in the industrial structure became necessary, as did the opening of the cities. The urban economic reforms which began in 1984 were just responding this very necessity. Since October of 1984 when a notice concerning the problem of agricultural populations moving into urban areas was issued, the number of town and village in the country increased abruptly from 2,781 in 1983 to 7,511 in 1985, and their population also rose from 62.31 million to 166.33 million (National Statistics Bureau, 1985 : 814-815, 1986 : 431). The results of a migration survey of urban population (Ma Xia, Wang Zhiwei : 1989:8) also show a high rise in the rate of population influx in the original chin, higher rate of population influx than to those of large, medium and small cities. In many years before 1979 the rate of population influx to town was lower than the rate to cities. In Table 1 we can see that the surplus agricultural labor force entering urban areas began rising quickly from 1984 on.

The peak in the increasing trend of the out-migration from agriculture to non-agriculture coincided with the beginning of urban economic reforms in 1984, and the speed of increase gradually lowered from 1986 on. In addition, from 1989 to 1990 agricultural workers who had moved to non-agricultural industries were returning to agriculture at a rate of approximately 20% (Zhou Junyu, 1991 : 25).

The above phenomenon can be interpreted as a result of several factors, but some scholars (Fan Lida, Sun Shaoyan, 1992) see the obstacles in the transition of the agriculture labor force from 1986 on as being in China's existing economic structure. Superficially, China's has the typical "dual economy" structure described by the Lewis model (Lewis, 1954), but China has no modern sectors in addition to the traditional industries. China's labor market is not yet completely free. In response to the demand constraint type labor market which restricts the effective demand, in the past urban employment in China has taken the form of a typical resource constraint type employment method (Kornai, 1980). There is no (or extremely little) surplus labor outside of the industrial sectors in cities, but within these sectors there is a substantial number of superfluous personnel or "job-holding unemployed" (approximately 20%).

On the other hand, traditional agriculture in China in the past was centered on food production in order to support the population growth. However, the population increase made it necessary to cultivate even more land and use even more labor. This resulted in the formation of a circular system for supporting the population growth. This method of production and population reproduction in agriculture in China continued up to the 1980s, and a vast surplus agricultural labor force was accumulated. This led to the severe contradiction which China is facing -- the pressure for transition for agricultural labor force, which is too abundant and growing too quickly, and the fact that the urban sector cannot

absorb any more labor, due to its resource constraint type employment method and the fact that it is already saturated. As a result, in China today there is a supply of labor with extremely low productivity, but it is difficult for modern sectors to use this labor. Under such circumstances, large numbers of town-village owned enterprises appeared since the 1980s, forming the China specific group of town-village owned enterprises. Some in China see the town-village owned enterprises as the major means of resolving the problems of transition and urbanization of the agricultural labor force. Others, on the other hand, stress the role of large cities in the industrialization process due to such problems as the low efficiency of town-village owned enterprises and environmental pollution. Still, we believe that the problem is not in the size structure of cities, but in solving the serious contradiction which China is now facing, as explained above. With the new boom of economic reforms in 1992, it seems that the transition in the mechanism of enterprise management is moving in this direction.

2 The Development of Tertiary Industries and Labor Transition

For causes lying in the system, before the 1980s China had stressed the productive functions of cities, and tertiary industries were for a long time seen as trite industries. As a result, the tertiary industries saw some growth at the end of the 1950s when population migration was relatively free, but once again shrunk after this. At present the percentage of workers employed in tertiary industries is still low (refer to Table 3).

After 1978, and in particular after the urban economic reforms of 1984, the lag in the development of tertiary industries began to cause problems to the life of the nation and its effect on the development of the production of companies also came to be recognized. Thus, after 1978, and in particular from 1984 on, there has been increasing interest in promoting tertiary industries. By 1985, the share of those employed in tertiary industries had risen to 16.7%, from 13.4% in 1982. After this the tempo of the development of tertiary industries once again slowed, and China was faced with the contradiction that the stage of development of its tertiary industries did not conform to its overall level of economic development. In fact, however, this contradiction is due to the low level of consumption of the nation.

One important facet of this contradiction is due to the redistribution of the national income. Compared to many other countries, in China the state accounts for the majority of the national income, and the share of enterprises and individuals is extremely low (World Bank, 1984). Under such circumstances, the consumption capacities of enterprises and individuals are too low, and the state is forced to entirely support such services as urban construction, transportation, postal services and education. Thus, China's particular

consumption pattern led to a structure in which the urban population relied on the public service facilities provided by the state and what they supply, whereas the rural population relied on self-sufficient agriculture itself. This is the major cause for the lag in the development of the tertiary industries in China. Though no data is available from 1990 and on, the new boom of economic reforms in 1992 can be expected to bring changes to this situation and promote a rapid development of tertiary industries.

3 Population Migration Between Provinces and Regional Economic Development

Until the end of the 1980s, it was difficult to research population migration between provinces in China. Until the results of a sample survey of 1% of the population in 1987 and the fourth population census in 1990 were published, the data necessary for studying the population migration between provinces was not available. Thus, there was very little data comparable in time series. Still, we believe it is necessary to look back briefly at the situation of inter-provincial population migration before the beginning of the 1980s.

Since 1949, China's policy on internal population migration has gone through various stages accompanying social and economic changes. Internal population migration in China before 1978 can be divided into the three major periods described below.

The period from 1949 to 1960 was when population migration was heaviest, and at this time the government's restrictions to population migration were relatively loose. At the same time, with the purpose of changing the pattern of industrial distribution, the government moved factories and enterprises from coastal cities to inland and remote regions, and with this large numbers of people also moved. The government absorbed large numbers of farmers from rural areas into cities, and at the same time tens of millions of farmers moved along the historical migration routes from the densely populated areas of the interior and east to the northeast, Inner Mongolia and the northwest to cultivate land. After 1954, the annual migration figures (influx and outflow) both reached over 22 million, and in 1960, the record year for population migration since China's foundation, there was an influx and outflow of 33 million people each (Ma Xia, 1989:2).

From 1961 to 1971, population migration was severely restricted. Population migration from rural to urban areas was particularly restricted, and population migration was low in this period. During this period large numbers of urban workers returned to rural areas, and large numbers of educated youth were sent to rural areas and remote rural areas. The spontaneous migration of farmers to remote interior regions also continued due to natural disasters and

economic difficulties. Despite this, the annual influx and outflow during this period dropped to a maximum of 19 million each (1961) and a minimum of 10 to 12 million each (1967 to 1969) (Ma Xia, 1989:2).

After 1978, the government's restrictions on the agricultural population were eased, and after reforms of the rural economic system the so-called communes were abolished, so population migration between agricultural regions increased. At the same time, large numbers of leaders and educated youth who had been rusticated to rural areas and remote regions from 1966 to 1976 began returning to the cities. Thus, the influx and outflowing population for 1977 to 1984 was between 14 and 23 million (Ma Xia, 1989:3).

From 1980 on, the inter-regional migration of population became even more active due to the economic reforms and the ensuing transformation of the industrial structure, and in particular the transition of the surplus agricultural labor force. According to the 1987 1% sample survey of the population, the total inter-provincial migration rate in 1986 and 1987 was far higher than in the 1982-1987 period for the majority of the provinces. In addition, the percentage of migration due to governmental order, including for transfer of work, distribution of work and the ensuing migration of families, decreased, and the percentage of independent migration for work, commerce, studying and to live closer to families and friends clearly increased (Wei Jinsheng, 1992).

According to the results of a 10% sampling of the 1990 population census (refer to Table 4), the net migration rate is positive for nine of the eleven provinces in the eastern coastal region, and the net influx to the most developed areas such as Beijing, Tianjin, Shanghai, Liaoning, Jiangsu and Guangdong is extremely high. However, the net migration rate in most of the central and western provinces is negative, and even where it is positive it is extremely low. At the end of the 1980s, population migration in China clearly shows a trend for migration from the central and western regions where development is lagging to the eastern, densely populated regions where the economy is advanced. The result of this migration is the polarization of the population distribution.

According to the results of a 10% sampling of the 1990 population census, there is an even stronger propensity for selecting the places to move for population among people 15 and older with a high level of education. The inter-provincial migration of high school graduates 15 and older is only positive in six provinces, of which five are in the eastern region: Beijing, Tianjin, Shanghai, Guangdong, and Shandong, and Shaanxi in the central region. Thus, the selection of movement of the population with a high level of education is even more evident, with a clear-cut trend for migration from the central and western regions to the most developed regions of the east. The total population of the five eastern provinces where the net migration of high school graduates 15 and older is positive accounts for only 15.9% of the total national population. This indicates that the net migration distribution of the population

with a high level of education is becoming even more concentrated. Thus, we can assert that from 1985 to 1990 people migrated from the center and west to the east, and that there was an even clearer migration of people with a high level of education towards the east, concentrating in the several most developed eastern areas (Fan Lida, 1992).

Large numbers of people are moving from the central and western regions where development is lagging compared with the east, concentrating in the densely populated eastern regions and causing a polarization of the population distribution. People with a high level of education are moving into the developed eastern regions, providing a potential positive factor for the development of these regions. On the other hand, the fact that the central and western regions are losing these highly educated people is a potential disadvantageous factor for the development of these regions. In the economic sense, this is a polarization of the development distribution. According to Lipshitz (1991), the results of the inter-provincial population migration in continental China from 1985 to 1990 should be defined as the "polarization of the population distribution" and "polarization of the development distribution".

According to the analysis by Kuznets (1964), there is a mutual interrelationship between economic growth and population redistribution. Changes in the economic environment are a major factor determining population redistribution. At the same time, population redistribution also affects economic growth. Thus, population redistribution can be considered as an adjustment with respect to economic opportunity. In the limited regions where the economy has grown rapidly, the development of new industries results in an increased demand for labor and the demand for highly educated workers. This becomes even stronger, generating a situation in which population and economy cannot be conciliated. Population redistribution occurs in response to this demand. The mutual relationship between net population migration and regional development shows a relatively strong positive relationship between income, consumption, percentage of urban population, educational level, and the income of non-agricultural industries, with the labor percentage, investments in fixed assets, investments of foreign capital, and total labor productivity of industrial enterprises, for all net migration categories, including total migrant population, the labor population, the population of 15 and older, and the population with a high level of education (high school and higher) (see Table 5). This analysis indicates that from 1985 to 1990 inter-provincial population migration in continental China consisted of migration towards areas in which the level of consumption is high, the population density and level of urbanization is high, transition of the industrial structure is advanced and investments are the highest. This also shows that the demographic pressure in densely populated areas is not as strong as in areas where the population density is lower and development is lagging.

China is currently in the initial stages of industrialization. At this stage, the

concentration and accumulation effect of the economy plays a dominant role and there are distinct imbalances in the economic development between regions. As such, population migration between rural and urban areas and from less developed to more developed areas is dominant in the process of redistribution of the population. The rapid economic development of China's coastal regions today would not be possible without the influx of large numbers of people from interior regions, and in particular the influx of workers with a high level of education and technical skill. With the population redistribution, the his or her income of the migrant increases. In addition, the majority of migrants find jobs in which they can use their skills more than before. Thus, this population redistribution is advantageous for the development of the national economy as a whole.

Unfortunately, we are still not able to measure precisely the effect of the outflow of population from the economically lagging central and western regions. It is clear, however, that this outflow has some disadvantageous effects. From the fact that the educational level of the people leaving these regions is generally higher than the average educational level for these regions, the massive outflow of population will have a latent effect on the economic development of these regions. Still, we can also envision some advantageous effects. In regions where the pressure of the population on the environment is strong and employment is saturated, the outflow of population is clearly advantageous for the region. In addition, if regions possessing some workers with a high level of education and technical skill cannot use these workers sufficiently or at all, the outflow of these workers cannot have a major effect on the region. However, we still do not have evidence which can prove these points.

Since the latter part of the 1980s, major pattern of migration has been basically spontaneous migration. As such, when people decide to migrate they consider not only the difference in income between the two regions, but also the expenses for migration, the costs which will be required until employment is found, and even the cost for overcoming psychological barriers and adapting to the new environment. Generally, the decision to migrate is made only when the benefits of migrating not only offset and but also outweigh these losses. Thus, spontaneous migration is usually advantageous for the migrant, who generally finds work with higher pay and in which he or she can exhibit fully his or her abilities. This is totally different from migration before the 1970s. In the 1960s, over 50 million city dwellers were sent to rural areas, and during the "Cultural Revolution" large numbers of leaders and educated youth were rusticated to rural areas and remote regions. In a way, this was non-spontaneous migration, disadvantageous to economic development. The actual results of this type of migration were that, even though people with a high level of education were sent to economically lagging regions, their labor could not be used rationally, and on the contrary they were engaged in work incommensurate with their knowledge and abilities. This type of migration results in the loss of human resource with a high level of

education from the regions they leave. These people also become a burden for the region to which they have moved. Thus, the effect on economically lagging regions of the outflow of highly educated people from them depends on whether or not these people play a full role in these regions.

Though we cannot measure the effect of the outflow of population from the central and western regions, in general it is clear that since the 1980s the inter-regional economic disparity in China has not grown as much as people imagined, and in fact is steadily shrinking. The Williamson Index describing the income gap between provinces since the foundation of China had been growing up to 1978, but after the beginning of reforms in 1978, when the movement of human and material resources became freer, this index has been steadily decreasing (Fan Lida, 1992). In addition, according to calculations by Wei Houkai, the income gap between the eastern, central and western regions has also begun shrinking since 1988 (Wei Houkai, 1992).

Conclusion

(1) From the late 1950s to 1978, the migration of population between urban and rural areas in China and the shift of the agricultural population to non-agricultural industries was strictly controlled by governmental policy. This control originated in the policy of having China's agricultural sector pay the expenses of industrial development. After the rural economic reforms in 1978, the latent surplus labor force in agricultural regions began coming on the surface, but after the urban economic reforms in 1984, this surplus agricultural labor force began moving to urban places (mainly towns). In this period, the speed of urbanization of the population was relatively fast.

However, the shift of the agricultural labor force to non-agricultural activities was limited up to the beginning of the 1990s. On the one hand there is a need for the shift of the surplus agricultural labor force, while on the other hand the urban enterprises with their resource constraint type employment method are already saturated and cannot absorb any more labor. With the renewed economic reforms in 1992, enterprises are reforming their management methods (including joint stock company and ownership system), and attempts are being made for a transition to an employment system restricted by the effective demand. In the near future, we can expect urbanization and the transition of the agricultural labor force to further accelerate.

(2) For causes lying in the system, China's tertiary industries were for a long time underdeveloped. After the urban economic reforms of 1984, there was a boom to

develop the tertiary industries, but this development was strongly impeded by the restraints of China's consumption patterns. However, if the urban economic reforms further progress in the 1990s, we can expect China's tertiary industries to enter a new period of development.

(3) Before 1978, inter-provincial population migration in China was controlled by governmental plans, and farmers in the eastern and central regions migrated spontaneously from densely populated areas to sparsely populated areas in the northeast and northwest due to economic difficulties. Spontaneous population migration started becoming more active after 1978. In particular, in the 1980s policies for developing the coastal regions were followed, and people, especially those with a high level of education, moved from the central and western regions to regions in the east which were densely populated, economically developed and where new industries were concentrated. The overall effect of this migration can be characterized as a "polarization of the population distribution" and "polarization of the development distribution". From the 1980s on, differences in the economic development and changes in the industrial structure between regions resulted in an adjustment of the imbalances of the demand for labor between regions through inter-regional population migration. The trend of population migration from the central and western regions to the eastern regions will continue for some time to come, but this is in step with China's current level of economic development. This trend in population migration will only be reversed when, along with economic development, on the one hand the economic development of the coastal region spreads to the interior, and on the other hand economies of scale becomes to be negative due to too much concentration of population and industrie.

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Table 1 Trends of percentage of urban population in China, 1949-1990

(%)

Year	Percentage of urban Population	Year	Percentage of urban Population	Year	Percentage of urban Population
1949	10.64	1978	17.92	1985	23.71
1955	13.48	1980	19.39	1986	24.52
1960	19.75	1981	20.16	1987	25.32
1965	17.98	1982	21.13	1988	25.81
1970	17.38	1983	21.62	1989	26.21
1975	17.34	1984	23.01	1990	26.41

Source: "Statistical Yearbook for China", State Statistical Bureau of China : 1991, P. 79.

Table 2 Shift of the Surplus Agricultural Labor Force in China, 1979-1988

(Units: 10,000 persons, %)

Year	Employment in rural non-agricultural sectors		Employment after migration into urban places		Total shift	
	No. of persons	Rate of increase (%)	No. of persons	Rate of increase (%)	No. of persons	Rate of increase (%)
1978	3,150		148		3,298	
1979	3,190	1.3	219	48.0	3,409	3.4
1980	3,502	9.8	346	58.0	3,848	12.9
1981	3,692	5.4	438	26.6	4,130	7.3
1982	3,805	3.1	504	15.1	4,354	5.4
1983	4,340	14.1	572	13.5	4,912	12.8
1984	5,888	35.7	695	21.5	6,583	34.0
1985	6,714	14.0	845	21.6	7,559	14.8
1986	7,522	12.0	1,012	19.8	8,534	12.9
1987	8,130	8.1	1,179	16.5	9,309	9.1
1988	8,611	5.9	1,339	13.6	9,950	6.9

Source: Shi Ruohua (ed.) : "Studies on Issues of the Shift of the Surplus Agricultural Labor Force in China", China Prospects Publishing Company, 1990 P. 14.

Table 3 Trends of Proportion of workers engaged in Tertiary Industries in China

(%)

Year	Proportion of workers engaged in tertiary industries	Year	Proportion of workers engaged in tertiary industries
1952	9.1	1983	14.2
1957	9.9	1984	16.0
1960	18.6	1985	16.7
1965	10.2	1986	17.2
1970	9.2	1987	17.8
1975	9.6	1988	18.3
1978	11.2	1989	18.3
1982	13.4	1990	18.6

Source: "Statistical Yearbook for China, State Statistical Bureau of China : 1991, P. 99.

Table 4 Inter-provincial Population Migration in Continental China from July 1, 1985 to June 30, 1990

(Unit: 1000 persons)

Region	Province	In-migration	Out-migration	Net migration
Eastern region	Beijing	66.7	12.3	54.4
	Tianjin	31.2	8.6	22.6
	Hebei	46.9	66.5	−19.6
	Liaoning	51.7	27.2	24.5
	Shanghai	65.8	15.1	50.7
	Jiangsu	84.0	58.9	25.1
	Zhejiang	32.3	62.6	−30.3
	Shandong	61.2	52.3	8.9
	Fujian	29.6	22.8	6.8
	Guangdong	116.5	25.0	91.5
	Hainan	13.4	11.2	2.2
Central region	Shanxi	26.9	22.7	4.2
	Inner Mongolia	24.0	27.8	−3.8
	Jilin	25.4	34.6	−9.2
	Heilongjiang	33.2	59.4	−26.2
	Anhui	34.4	53.8	−19.4
	Jiangxi	22.6	27.7	−5.1
	Henan	49.5	57.8	−8.3
	Hubei	41.2	34.8	6.4
	Hunan	24.9	50.4	−25.5
	Guangxi	15.8	54.9	−39.1
	Sichuan	44.3	128.7	−84.4
	Shaanxi	30.4	33.2	−2.8
Western region	Guizhou	19.9	30.9	−11.0
	Yunnan	23.6	27.2	−3.6
	Gansu	16.1	26.9	−10.8
	Qinghai	10.5	9.8	0.7
	Ningxia	7.8	5.6	2.2
	Xinjiang	33.6	27.3	6.3

Source : Tabulations of China 10% Population Sample Survey, Department of Population Statistics, State Statistical Bureau, 1991.

Remark 1 : This data is tabulation results of a 10% sample. (The total migration numbers have not yet been calculated.) No migration survey was conducted in Tibet, but the influx population in other provinces includes 7,600 persons who entered from Tibet, Hong Kong, Macao and Taiwan.

Table 5 Correlation Analysis of Net Population Migration and Regional Development in China, 1989-1990

	N	LN	N15+	NE4	NE5
INCOMEpc	.8393**	.8482**	.8485**	.7679**	.7292**
CONSUMPTIONpc	.7953**	.8047**	.8040**	.6987**	.6585**
DENSITY	.7000**	.7034**	.7011**	.6088**	.5364*
URBAN SHARE	.7956**	.8048**	.8059**	.7578**	.7488**
EDUCATION	.8269**	.8342**	.8383**	.8546**	.8664**
NAGINCpc	.6534**	.6563**	.6565**	.6119**	.5941**
INVESTMENTpc	.8242**	.8351**	.8376**	.7780**	.7626**
WHOLE SALLpc	.8422**	.8514**	.8539**	.8141**	.7982**
NALS	.7850**	.7926**	.7931**	.7268**	.7116**
FIpc	.6508**	.6592**	.6618**	.6100**	.5971**
LP	.7215**	.7226**	.7226**	.6903**	.6536**

N of cases: 29 1-tailed Signif: *-.01 **-.001

Source: Population migration data according to the results of the tabulated 10% sampling of the 1990 population census, other variable data from the National Statistics Bureau of China's "Statistical Yearbook for China", 1991, Beijing.

Notes:

N : Percentage of the net population migration in the corresponding province's population at mid-1990.

LN : Percentage of the population of working age (15 to 64) in the corresponding province's population at mid-1990.

N15+ : Percentage of the population of 15 and over (15 to 64) in the corresponding province's population at mid-1990.

NE4 : Percentage of the net migration of population of 15 and over with a high school education or higher in the corresponding province's population at mid-1990.

NE5 : Percentage of the net migration of population of 15 and over with a middle specialized education, junior college or university education or higher in the corresponding province's population at mid-1990.

INCOMEpc : Per capita national income.

CONSUMPTIONpc : Per capita consumption.

DENSITY : Population density.

URBAN SHARE : Share of urban population.

EDUCATION : University education - illiteracy rate.

NAGINpc : Per capita national income of non-agricultural industries.

INVESTMENTpc : Total per capita investment in fixed assets.

WHOLESALEpc : Per capita retail sales.

NALS : Labor force share of non-agricultural industries.

FIpc : Per capita foreign investment.

LP : Labor productivity of total industrial enterprises.

Chapter Six

NEW LABOR MIGRATION AND CAPITAL INVESTMENTS IN ASIA — FOCUS ON SOUTHEAST ASIA —

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1 Recent Features of International Migration and Labor Migration in Asia

(1) International Migration

The structure of manpower flows in the world today is changing greatly. These changes are qualitative and are accompanied by quantitative increases. We should also point out that a number of factors of basic changes are mutually related directly and/or indirectly each other.

In the American continents, there is an ongoing problem of how to restrict illegal Hispanic workers from Mexico and from Central and South America entering the United States via Mexico (new immigration restrictions of November, 1990). Furthermore, strengthening entry restrictions for Hispanic immigrants in the U.S. results in curbing the flow of labor to the U.S. from "upstream" South America. A part of this flow leads to increased pressure to migrate to Japan among migrating ethnic Japanese workers in such South American countries as Columbia and Peru.

In Europe, the numbers of refugees and political émigrés from the former Soviet Union and Eastern Europe is increasing rapidly. There are many people in the former Soviet Union and Eastern Europe whose have roots in Germany, Greece, and other European countries. In particular, there is strong pressure for immigration from Poland, the former Soviet Union, Hungary and Rumania to Germany, from the Black Sea region and Albania to Greece, and from Bulgaria to Turkey. In addition, the Gulf War and the civil war in Yugoslavia has led to a great flow of immigration of refugees to such countries as Germany, Greece, Italy and Turkey. The migration of labor in the form of refugees, as seen in the case of Albanian refugees immigrating to Italy, is being accelerated by the free labor migration policies adopted by Hungary. Migration in Europe today is of a completely different nature than five years ago.

In Asia, there are flows of labor migration just as massive as in the above regions. The main supply regions of Asian manpower flow are India, Sri Lanka, Pakistan, Bangladesh, Thailand, the Philippines and China, and the destinations are Japan, Singapore, Malaysia, Korea and Taiwan, which will be discussed further on, as well as the Persian Gulf coast nations, the U.S., Canada and Australia. Of course, Asia is the region with the strongest labor supply pressure in the world, including in particular China. In addition to the quantitative size of this pressure, another point receiving much attention today is the structural change consisting of the expansion of mutual exchange of migrants within the Asian region.

At a recently held panel discussion of the International Conference titled "Japan and International Migration: Challenge and Opportunities", Mr. J. N. Purcell, Chairman of the

International Organization for Migration discussed this recent trend as follow: "Today, as many as 70 million persons, mostly from developing countries, are living and working legally and illegally in other countries. Over one million persons emigrate permanently each year and nearly as many seek asylum in industrial states. In 1992, over seventeen million refugees live outside their homeland compared with about two million in the 1950s (*1)".

This makes for a flow of a total number of 90 million people, almost equal to the entire population of Germany. Furthermore, the structure of migration is becoming increasingly diverse. The OECD's 1992 SOPEMI (Continuous Reporting System on Migration) refers to this phenomenon as "the globalization of international labor". This globalization of international labor migration is defined as follows: "In the same way as production of and trade in goods and services, migration has now taken on a global dimension. All the continents are involved, though to differing degrees. Moreover, flows are becoming more diversified yet, at the same time, in most countries are rapidly developing the same characteristics. Alongside the traditional emigration flows of permanent workers and their families, students and trainees, there are flows of temporary and seasonal workers, frontier workers, asylum seekers and illegal migrants.(*2) The "globalization" in the SOPEMI report includes diversification in quantity and quality, changes in the content of the conventional patterns of the categories of immigrants, and the appearance of economic immigrants in the form of refugees and economic immigration under the pretext of political refuge.

(2) Labor Migration in Asia

There are a variety of ways to categorize the increasingly diversified international migration of labor. Professor R. T. Appleyard of the Western Australia University divides international migration of labor into the following six patterns: (*3)

1) Permanent (setters), including persons admitted under family reunion schemes:
2) Temporary contract workers, normally semi-skilled or unskilled who remain in the receiving-country for finite period, often two years:
3) Temporary professional transients, professional or skilled workers who move from one country to another country as employees of international and/or joint venture companies:
4) Clandestine or illegal workers whose entry may or may not be sanctioned by the receiving-country's government:
5) Asylum seekers who cross borders and appeal for status on grounds of political discrimination:
6) Refugees as defined by the 1951 UN Convention relating to the State Refugees:

These patterns reflect the conventional classifications used in the past rather than any

theoretical novelty.

Patterns 1) through 4) above consist of what is usually called migration based on economic factors, while patterns 5) and 6) are migration for political or non-economic factors. However, as Appleyard points out, in terms of economic regions, most migration is from underdeveloped or developing regions, whether for political or economic reasons, and Appleyard's hypothesis that these patterns are differences in stages evolution of forms of international migration of labor is likely valid. In other words, it is difficult to imagine that permanent, contracted or illegal migrants would appear in the initial stages of international labor migration. When a stable, abundant labor force exists, capital moves before labor, capital is invested, the labor force in that region is employed, and this gives rise to the "importation" of the specialized and skilled workers required for this invested capital (for example, the cases the influx of workers from Japan, Europe, etc., to hotels and fishery industries in Fiji and Samoa). Thus, when fundamentally economic difficulties are encountered where social, political and ethnic discord already exists, a manpower outflow process is formed as refugee-type migration.

The types of direct factors described above are apparent for the various patterns of international labor migration, but if we study the entire process leading to actual emigration, we can also fundamentally find a relationship with the extent of development and the economic environment. It is clear that international migration of labor is also related to long-term trends in capital investments and outflow.

Within international migration of labor, Asia occupies a position as a region which supplies labor to the rest of the world. Historically, modern migration from Asia began in the first third of the 19th century. However, to study migration in current trend we should focus on the changes over the past 20 years. This is because in the 1960s when economic growth after World War II had become stable, the main destination of international flow of migration was the U.S., Australia, Canada, and partly to South America. If we look at the flow of Asian labor to the U.S. over the two decades since the 1960s, we can see that it changed greatly, as shown in Table 1.

In the decade of the 1960s, over 300,000 people migrated from Asia to the U.S. The number of such migrants increased suddenly in the beginning of the 1970s, and in the decade of the 1970s over 1,340,000 people migrated from Asia to the U.S., an increase of over four times. This by far outnumbers the natural growth rate of the population. An average of over 100,000 Asians immigrated annually to the U.S. Entering the 1980s, immigration increased still further to an annual average of over 200,000 people (1980 and 1981). We should also note that not only did the numbers of migrants increase over this period, but the number of countries of origin also increased.

Furthermore, in the 1970s the numbers of workers migrating to Middle Eastern coun-

tries, particularly Gulf areas, swelled. The flow of skilled and specialized workers to the U.S. continued as an undercurrent, but the main current in quantitative terms switched to oil-producing countries. If we look at Table 2, which shows the flow to the Middle East by country of origin, we can see that in the 1980s the numbers of people migrating to the Middle East from South and Southeast Asia were higher than the numbers of people migrating to the U.S. for both of these regions. This shows the vast demand for labor brought about by the massive projects implemented with "oil dollars" after the oil shock.

However, the Gulf War produced a major change in this flow. Professor Yasuo Kuwahara puts the annual influx to the Middle East at 5 million people ("Workers who cross the Borders", Iwanami Shoten Publisher, 1992). We can estimate that this was approximately the case at the end of the 1980s. At the same time, it is clear that Iraq invasion of Kuwait has given a major impact on Asia's international labor migration (refer to Figure 1).

So which destination did Asian migrant workers head for after the Iraq invasion of Kuwait? The outflow structure has changed and inter-regional migration within Asia become a major part.

However, it is currently difficult to fully comprehend the situation of inter-regional labor migration in Asia. Still, based on a number of reports, we can assume that the number of migrants is by no means lower than after the Iraq invasion of Kuwait, but is continuing to rise. This shows that the labor markets in Asia are rapidly becoming internationalized. Though there is no overall data showing quantitative evidence of this, we can understand that Asian labor markets are rapidly increasing in scale. At the same time, it shows that economic grouth in Asia, especially due to direct overseas investment, has developed the fundamental basis of labor demand in this areas.

2 Economic Growth in Asia and the Formation of the "Asian Labor Market Zone"

(1) Economic Growth in Asia

In the 1980s, the world economy grew overall. After the recession at the beginning of the 1980s, from 1983 on the world economy entered a period of expansion and grew at a rate of between 3 and 4% in the last half of the 1980s. Economic growth was particularly high in the Asian region - 6.8% in 1986, 8.1% in 1987, 9.0% in 1988, 5.4% in 1989, and 5.5% in 1990 - making Asia the region with the highest growth in the world (refer to Table 3). However, though Asia accounted for 6.5% of the world economy in 1990, this was still less than half of Japan's share of 13.2%. Thus, the low economic scale should be seen as a factor in the high

growth rate. Still, it is a fact that Asia became a economic "growth region".

The fact that high economic growth in Asia continued at a stable pace exceeding the world growth rate during the Gulf War clearly indicates Asia's potential energy as a growth region. However, growth was not equal in all Asian regions.

If we divide the Asian region into the so-called NIEs, Southeast Asia, Southwest Asia and China, we can see slight differences between these areas. Growth was particularly high in the Asian NIEs, reaching the two-digit level (10.1%) in 1988, then 6.4% in 1989, 6.7% in 1990 and 6.3% (projected) in 1991, thus exceeding the growth rate for Asia as a whole for each of these years. Next, the economic growth rate in the Southeast Asian area was also high, at 8.4% in 1988, 8.6% in 1989, 7.4% in 1990, and 6.5% (projected) in 1991. Thus, the growth rate in this area also exceeded the growth rate for Asia as a whole (except in 1988 when it was slightly lower). Compared to these two areas, the economic growth rate in Southwest Asia was 8.3% in 1988, 4.9% in 1989, 4.6% in 1990 and 4.4% (projected) in 1991, below the rate for Asia as a whole in each of these years. China had a high growth rate of 11.0% in 1988, above the level for Asia as a whole, but from 1989 on the rate has been dropping somewhat (refer to Table 4).

Thus, the economic growth rate in Asia is being led by growth in the NIEs and in Southeast Asia.

The NIEs and Southeast Asia are the center of the Asian economy which is playing a role as leader in the world economy, and there are several factors promoting economic growth in Asia. Some factors which have received particular attention in recent years are: 1) the increase in domestic demand in the Asian NIEs (especially Korea); 2) the increase in direct foreign investments; 3) the industrialization of ASEAN countries (increase in investments); and 4) the fact that increased business within the Asian region, a result of the mutual effect of the above factors, is offsetting the decrease in exports to the U.S. due to economic friction.

One factor which has particularly stimulated economic growth in Asia in recent years is increased investments, and especially the increase in investments in Asia by developed countries and the increase in investments in the ASEAN region, that is Indonesia, Thailand, Malaysia and the Philippines, by the Asian NIEs (refer to Table 5). In other words, we can say that mutual investment relations within the Asian region are being formed at a rapid pace.

(2) The Appearance of a New Asian Labor Market Zone

This trend in investments in ASEAN countries basically indicates the following new trends: 1) reforms in economic structure focusing on primary industrial goods; 2) the growth of export-dependent industries; and 3) reforms in economic structure due to the development of export industries. These trends are related to the policies adopted between developed

countries in the 1980s of keeping their industrial structure regulating policies in step with one another, in other words policies accepting international industrial structure adjustment passively, as well as the fact that the ASEAN nations themselves are actively reforming their economic and industrial structures in response to the changes brought about by the adoption of these international industrial structure adjustment policies.

The transition in the economic policies of ASEAN countries in the last half of the 1980s has been prompt and innovative. ASEAN countries have adopted such policies as: 1) reviewing and/or eliminating protective policies for supporting international competitivity focusing mainly on primary and resource industries; 2) prioritizing the growth of export-oriented industries and companies; 3) improving industrial infrastructure (ports, roads, communications, etc.); 4) promoting and strengthening medium and small enterprises; 5) the liberalization of imports; and 6) the use of financial and monetary policies for priority allocation to the industrialization of national resources.

For the international handling of capital as well, in response to the shift of policy priorities towards the growth of export industries, ASEAN countries have abolished or eased restrictive measures with respect to foreign capital such as limitations on imports, capital shares and rates of domestic production, and have adopted policies for promoting domestic and foreign investment.

The rapid economic growth of the Southeast Asian region generated by the prioritized promotion of direct foreign investment and the related active economic and trade policies for supporting this promotion is not only bringing about growth in trade and domestic markets but also resulting in major changes in labor markets. Though the structure of the international flow of labor in the Asian region has been changing since the 1960s, as discussed in the previous section, in the last half of the 1980s signs of a different type of change began appearing.

This change is the rapid increase in the numbers of foreigners working illegally in unskilled labor department in Japan, Taiwan and Korea. The question here is what kind of new meanings this increase in illegal foreign workers has. In Japan in particular, this increase in illegal foreign workers seems to have been considered as a phenomenon peculiar to the Japanese economy, due to the increasingly strong yen in the last half of the 1980s and the increase in the demand for labor caused by the ensuing economic boom. Today, however, the same phenomenon is appearing not only in Taiwan and Korea but also in ASEAN countries, and it seems more appropriate to consider it as the beginning of the new formation of an international labor market in Asian areas which could be called a new "Asian labor market zone". In other words, a structure for the mutual exchange of labor migration, reciprocal labor power fluidity is forming in the NIEs and ASEAN countries.

The following points deserve attention with respect to the formation of this "Asian labor

market zone": 1) The dependence on the influx of workers from overseas is increasing for Japan and the NIEs, whose economic growth is high; 2) Whereas from the 1970s on, Asian countries, aside from Japan, were labor supply regions, today not only Japan and the NIEs but also the ASEAN countries are becoming labor demand regions; 3) The regions from which Japan, the NIEs and ASEAN countries procure labor are becoming increasingly international, including neighboring countries; and 4) An international labor market zone, in other words a mutual exchange structure for labor, has appeared, with Japan, the NIEs and ASEAN countries at the center, such countries as Indonesia, the Philippines, Pakistan, Bangladesh and Sri Lanka on the periphery. The previous structure in which Asia exported labor to developed regions and Middle Eastern oil-producing countries is changing rapidly.

A report by Professor C. Stahl at a refugee seminar at the 9th IOM (International Organization for Migration) conference held in Geneva in 1990 calculates the number of workers migrating to the Asian region in 1988 as follows (*4): from Korea, 8,215, approximately 10% of the total outflow of 82,982; from Indonesia, 6,485 or 10.1% of the total outflow of 63,998; from the Philippines, 92,648 or 19.7% of the total outflow of 471,030; from Thailand, 21,593 or 18.2% of the total outflow of 118,957; and from Sri Lanka 989 or 5.2% of the total outflow of 18,973. These figures can be seen as an initial phenomenon indicating that a structure of mutual exchange of labor is forming within the Asian region.

Overall, we can see the formation of this structure as increasing international mutual exchange of "people" or labor upon a basis of international mutual exchange of goods and capital. As shown on Table 6, direct investments and exports in the Eastern Asian region (Japan, Asian NIEs and ASEAN countries) increased from 1987 to 1990, and the share of direct investments in particular is increasing rapidly.

3 Mutual Exchange of Labor in the Major Asian Countries

As we have pointed out, mutual exchanges of labor have increased along with the rise in mutual exchanges of goods and direct investments within the Asian region. However, as we do not have sufficient concrete data to indicate the extent of this increase, the structure and characteristics of actual labor movement it is not necessarily clear. To take Japan as an example, we do not know the precise number of foreign workers in the country. According to estimates by the Ministry of Labor, there are some 60,000 legal foreign workers, some 230,000 second and third generation ethnic Japanese from South America, some 260,000 illegal foreign workers, and some 70,000 university and specialized school students. This makes for a total of 600,000 to 700,000 people. However, it is thought that the number of

illegal foreign workers is even higher.

The same situation is arising in the Asian NIEs.

First let us look at the case of Korea. Up until about 1981, Korea was a labor supply country, and had sent more than 150,000 workers to the Middle Eastern region alone. However, today the number of Korean workers in the Middle East has dropped to approximately 20,000. This is due to such factors as the need to replace Korean workers, who came to require higher salaries, with Philippine and Thai workers.

Incited by the growth of the Korean economy in the last half of the 1980s, and in particular the growth of export processing industries, illegal workers began entering Korea from the Asian region. In 1991, of the approximate 3 million foreigners who entered Korea, 42,000 stayed in Korea illegally. Of these, Chinese were the most numerous at about 18,000, followed by Philippines (16,000) and Nepalese (2000). These illegal workers are employed in the "3D professions" as they are called in Japan - Dirty, Difficult and Dangerous jobs, in construction and manufacturing (*6). The Korean government legalized the employment of foreign workers in the coal mining industry which has been suffering from a chronic shortage of workers, but employment in this industry is falling as it is not able to contend with the price competition of petroleum energy. Also, foreigners can work legally in Korea as trainees for the personnel needed for joint projects overseas resulting from direct investments. Last year, some 1500 such trainees entered Korea.

In addition, another phenomenon deserving attention in Korea is the fact that with the growth of the Korean economy in the 1980s, workers who left Korea in the past are returning. At the beginning of the 1980s, there was an annual average of some 1000 returnees, but in 1991 this number had reached 7000 (*6).

The same types of phenomena can be seen in Taiwan. Like in Japan and Korea, the employment of unskilled foreign labor is not allowed. However, to deal with the sudden increase in foreign workers at the end of the 1980s, immigration laws were revised in 1990 to permit employment of foreign workers in six types of areas after introducing two-year amnesty. These areas are textiles, metal refining, metal processing, machinery, electrical equipment and construction. It should be noted that these include export-related and infrastructure-related areas. Incidentally, permission has been granted for the employment of 15,000 foreign workers on civil engineering which builds basic industrial infrastructure. However, the revision of the immigration laws includes fines for companies employing foreign workers without the authorization of the government and employment through foreign worker placement agencies. According to Taiwanese researcher Ching-lung Tsay, in 1991 there were some 47,000 foreigners, from Indonesia, Malaysia, the Philippines, Sri Lanka and Thailand, who had overstayed their visa terms (*7). There are also a substantial number of Chinese who have entered Taiwan illegally or are working illegally as crew members on Taiwanese-regis-

tered ships as merchant marines and fishing boats.

We should not overlook the strong relationship between the influx of foreign workers to Taiwan and the nationality of these workers with Taiwanese foreign investments in Southeast Asian countries (*8). Furthermore, in addition to revising immigration laws, the Taiwanese government has also legalized the employment of unskilled foreign workers for a limit of two years, but employment agency laws require employers of foreign workers to pay a surcharge. This surcharge is meant to be used for the training of regional workers and the improvement of their levels of skill.

Singapore already has a significantly high rate of foreign workers. In 1990, the number of foreign workers had reached some 300,000, about 10% of the population. These foreign workers have work permits and employment licenses. Of them, some 200,000 are thought to be unskilled. However, these workers have been allowed to work in Singapore for some time now in order to offset the labor shortage in the manufacturing, shipbuilding and construction areas.

Most of the foreign workers in Singapore are from Malaysia, but with the growth of the Malaysian economy beginning in the 1970s, it became difficult to employ Malaysian workers at low salaries level. Thus, the government gave permission for the procurement of foreign workers from such traditional labor supply countries as India, Bangladesh, Indonesia and Thailand. Furthermore, at the beginning of the 1980s, employment in manufacturing and construction increased, so the demand for workers in such areas as hotels and restaurants also began to increase, and employers were forced to rely on foreign workers to fill these jobs.

In response to this imbalance in the labor market, in 1982 the government of Singapore established a levy system for the employment of foreign workers for such varied reasons as to regulate the activities of employers procuring foreign workers, to restrict illegal employment, and to establish a systematic method of preventing the deterioration of labor conditions.

At first the levy system only applied to those employing foreign workers other than Malaysians, but in 1987 this was changed and a surcharge of 140 Singapore dollars per month was applied for all workers newly receiving work permits. This was considered a means of guarantee for preventing a gap in salaries between Singapore and foreign workers. It also made it possible to adjust selective measures for arranging balances between different types of jobs and industries.

In 1992, the government of Singapore is beginning to deal with the issue of foreign workers in new ways, including: 1) the strengthening of penalties for employing foreign workers illegally; 2) the active application of the new foreign worker employment law enacted in 1991 (including on-the-spot inspections, fines, etc.); 3) an increase in the surcharges for foreign workers; and 4) the introduction of a bidding system for foreign worker employment rights and a triple employment tax system (i.e. a monthly employment tax of 300 Sin-

gapore dollars per foreign worker for firms with a foreign worker employee rate of 35% or less. 450 Singapore dollars per foreign worker for firms with a foreign worker employee rate of 35 to 45%. The upper limit for the foreign worker employee rate is 45%).

Because Singapore began accessing to international labor market relatively earlier than other Asian countries, its showed a kind of advanced system for the internationalized management of the labor market. Approximately one third of all firms in the manufacturing sector, or some 3,800 firms, have a foreign worker employee rate of 35% or higher.

Despite Singapore's stern restrictions, illegal foreign workers still exist. For example, the new foreign worker employment law established to prevent the influx of foreign workers from Thailand and other countries into the construction and manufacturing industries is meeting with opposition both from within Singapore and abroad, and has developed into a diplomatic problem with the Thai government due to such measures it includes as the deportation of illegal workers.

Malaysia is a country which on the one hand exports foreign workers and on the other hand in recent years has developed a problem of influx of foreign workers. Beginning in 1990 in particular, large numbers of foreign workers have been entering Malaysia to work in such fields as agriculture and construction. With the continued high economic growth centering around export-oriented industries, a shortage of labor developed in such areas as agriculture and construction. To fill in this shortage, foreign workers began coming illegally from such countries as Thailand, Indonesia and the Philippines.

The Malaysian government has begun adopting policies with respect to foreign workers to limit the sacrifices of domestic workers. In recent years, domestic workers have begun shunning work in such areas as agriculture and construction in which labor conditions are poor, to the point that this has resulted in the problem of idle land and the abandonment of plantations. As of 1991 there were an estimated 22,000 Thais, 21,000 Indonesians, 20,000 Filipinos and 2000 Bangladeshis working legally in Malaysia to fill in this gap. According to some accounts, the number of illegal foreign workers is as high as one million, and even legal workers are only permitted to work for a limited period of time. However, even illegal workers can work legally for six months in agriculture and construction where the labor shortage is severe if they register. Only skilled or semi-skilled workers and technicians are allowed to work in manufacturing, and no foreign workers are allowed to work legally in the services area and other industries. Maids, however, are issued temporary employment passes (blue passes) which must be renewed each year. Foreign workers are limited to two years of employment, after which they must return to their home country.

Furthermore, as the shortage of labor in Malaysia has not eased, the period of legal employment has been extended to five years as of January, 1992.

We have now seen how among Asian countries, the NIEs and ASEAN nations, though

they had exported workers through the middle of the 1980s, have now begun to accept foreign workers while at the same time sending workers to other countries. This new trend has just begun, and much of the migration is illegal. However, despite its illegality, if we consider that 1) the undercurrent in this trend consists of only a portion of the major current of migration, 2) that it is mutually related at its root to the movement of goods and capital, and 3) there is political movement towards the legalization of foreign workers, it seems valid to say that this is the beginning stage of an international structure of labor migration within the Asian economic sphere.

Notes:

1) IOM/APIC Conference, "Japan and International Migration: Challenges and Opportunities" (7-9 October, 1992, Tokyo).
2) OECD, SOPEMI, "Trends in International Migration" (1992, Paris), p. 14.
3) R.T. Appleyard, "International Migration: Challenges For The Nineties" (IOM, 1991, Geneva), pp. 22-23.
4) C. Stahl, "South-North Migration in the Asian-Pacific Region" (1990, Geneva).
5) Funkoo Park, "International Flow of Labor: Past Experience and Current Debate in Korea", Asia Club Papers No. 3, pp. 22-34.
6) Honk Kim, "Migration and Development Policy of Korea", (Tenth IOM Seminar on Migration, 1992, Geneva).
7) Ching-lung Tsay, "Labour Flows from Southeast Asia to Taiwan" (International Migration Flow and Foreign Investment, 1991, Tokyo).

Table 1 Outflow from Asia to the U.S. by Country and Region (1961-81)

(Units: persons)

Country/region of origin	1960–81	1960–64	1965–69	1970–74	1975–79	1980	1981
Vietnam	239,929	603	2,564	14,661	122,987	43,483	55,631
Philippines	508,507	15,753	57,563	152,706	196,377	42,316	43,772
Korea	341,923	9,521	18,469	93,445	155,505	32,320	32,663
China	328,708	20,578	65,712	81,202	107,762	27,651	25,803
India	229,885	3,164	18,327	67,283	96,982	22,607	21,522
Laos	38,371	–[1]	–	166	8,430	13,970	15,805
Cambodia	21,175	–	–	166	5,459	2,801	12,749
Iran	67,997	2,960	5,935	12,901	24,666	10,410	11,105
Pakistan	41,580	813	2,704	11,228	17,282	4,265	5,288
Thailand	54,131	703	2,748	18,740	23,026	4,115	4,799
Hong Kong	77,611	3,103	19,088	20,446	27,059	3,860	4,055
Japan	100,892	23,327	20,649	26,802	21,993	4,225	3,896
Afghanistan	3,930	–	–	398[2]	929	722	1,881
Burma	10,932	–	–	3,080[2]	5,558	1,211	1,083
Malaysia	5,606	–	–	1,307[2]	2,471	795	1,033
Indonesia	24,121	13,261	2,541	2,910[2]	3,426	977	1,006
Bangladesh	4,610	–	–	301[2]	3,021	532	756
Sri Lanka	4,255	–	–	1,320[2]	2,090	397	448
Singapore	2,824	–	–	635[2]	1,459	322	408
Macao	2,494	–	–	595[2]	1,358	261	280
Nepal	700	–	–	168[2]	351	98	83
Brunei	128	–	–	–	84	13	31
Bhutan	66	–	–	9[2]	36	13	8
Maldives	10	–	–	1[2]	6	2	1
Other Asian	11,101	2,838	5,942	2,321	–	–	–
Total	2,121,466	96,624	222,242	512,791	828,337	217,336	244,106

Notes:

1) Unknown

2) For 1971 or 1974 only

Source: From "U.S. Immigration and Nationalization Bureau "Annual Bulletin" and Annual Bulletin of Statistics (ed. Forset et al.), (1984).

Table 2 Annual Numbers of Contracted Migrant Workers from Major Asian Countries to the Middle East

(Units: persons, %)

Country of origin	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
South Asia											
Bangladesh	15,932 (98.2)	22,739 (99.7)	24,209 (98.9)	32,514 (96.4)	53,839 (96.5)	62,186 (99.0)	58,229 (89.3)	55,921 (98.5)	76,785 (98.8)	68,004 (99.0)	54,500 (99.1)
India a)	22,900	69,000	171,800	268,200	272,000	224,257 (93.6)	217,971 (69.9)	198,520 (96.4)	160,396 (98.4)	109,234 (96.1)	121,812 (97.2)
Pakistan	74,589 (53.1)	75,966 (58.2)	82,195 (65.5)	117,187 (90.3)	151,849 (90.2)	141,416 (98.9)	127,616 (99.5)	99,654 (99.3)	87,523 (98.9)	62,390 (99.6)	69,340 (99.6)
Sri Lanka b)	n.a	n.a	20,980	24,053 (84.0)	47,394 (82.6)	63,522 (90.0)	68,905 (95.0)	n.a	n.a	n.a	n.a
Southeast Asia											
Indonesia	–	–	7,651 (73.7)	11,501 (71.1)	11,484 (64.1)	9,595 (45.4)	17,899 (61.8)	28,702 (75.8)	48,280 (85.2)	42,142 (90.9)	n.a
Korea	52,247 (94.0)	81,987 (97.8)	99,141 (98.7)	120,535 (96.6)	138,310 (93.7)	151,583 (91.5)	130,776 (83.5)	100,765 (85.0)	72,907 (90.0)	44,753 (85.2)	n.a
Philippines	25,721 (70.1)	34,441 (67.6)	73,210 (79.1)	132,044 (83.9)	183,582 (87.0)	211,033 (84.4)	323,414 (85.1)	311,517 (84.0)	266,617 (78.9)	262,758 (73.5)	306,757 (72.0)
Thailand	3,870 (100.0)	14,215 (96.6)	8,282 (85.5)	20,761 (96.6)	24,638 (92.1)	105,163 (96.9)	64,405 (94.1)	67,430 (89.9)	61,659 (88.5)	74,046 (86.4)	74,921 (87.8)

Notes:

a) Figures for 1977 to 1981 include migrants to other regions.

b) ARTEP (International Labour Organisation Asian Employment Programme) estimates.

c) Figures in parentheses indicate the percentages of migrants to the Middle East among total emigrants for that country.

Source: Figures collected by the various Labor Ministries for the "ILO Asian Region International Labor Migration Survey Project" (in UN, ILO "To the Gulf and Back" (1998, New Delhi)).

Table 3 World Real Growth Rates and World Trade

	Nominal GNP (1990)		Real growth rate (%)					(Reference) IMF estimates	
								1991	1992
	100 millions of US$	Share	1986	1987	1988	1989	1990	predicted real growth rate	estimate
World total	227,215	100.0	3.1	3.5	4.4	3.3	2.2	0.9	2.8
Developed countries	162,870	71.7	2.7	3.4	4.5	3.3	2.6	1.3	2.8
U.S.A.	54,652	24.1	2.7	3.4	4.5	2.5	1.0	△0.3	3.0
Japan	29,898	13.2	2.6	4.3	6.2	4.7	5.6	4.5	3.4
EC	59,975	26.4	2.8	2.7	3.9	3.5	2.8	1.4	2.3
West Germany	15,012	6.6	2.2	1.5	3.7	3.8	4.5	3.1	2.0
Developing countries	64,428(89)	28.3	4.0	3.8	3.9	3.2	1.0	△0.6	2.8
Asia	14,853(89)	6.5	6.8	8.1	9.0	5.4	5.5	5.0	5.2
Asian NIEs	5,044	2.2	11.0	12.2	9.6	6.3	6.7	6.2	6.1
China	3,638	1.6	8.3	11.0	10.9	3.6	5.0	4.5 (target)	—
Middle East	5,840(89)	2.6	△0.6	△0.6	3.8	4.6	0.7	△4.0	11.2
Latin America	8,207(89)	3.6	4.1	3.0	0.5	1.4	△0.9	1.2	2.2
USSR and Eastern Europe	32,002(89)	14.0	3.3	2.6	4.3	1.9	△3.6	△10.6	△3.9
Nominal world trade (1990)			Real world trade growth rate (%)						(%)
33,241			4.9	6.7	9.1	6.9	4.3	0.6	5.0

Sources: IMF, "World Economic Outlook" (October, 1991)
"International Financial Statistics"
OECD, "Main Economic Indicators", World Bank "ATLAS"
CIA, "Handbook of Economic Statistics" (GNP for USSR and part of Eastern Europe)
Other national statistics.

Note: IMF estimates quoted from "World Economic Outlook" (October, 1991). Based on the following petroleum prices: $18.43 per barrel (1991), $18.61 per barrel (1992) (spot price averages for Brent, Dubai and Alaskan petroleum). (From Economic Planning Agency, "White Paper on World Economics", p. 32.)

Table 4 Economic Growth of Major Asian Countries

	Real economic growth (GDP)					
	1988	1989	1990	1991		Estimate
				I Q	II Q	
Korea	12.4	6.8	9.0	8.9	9.2	8.7
Taiwan	7.8	7.3	5.0	6.2	7.1	7.0
Hong Kong	7.9	2.7	2.8	4.3	3.6	4.0
Singapore	11.1	9.2	8.3	7.5	7.0	6~8
Asian NIEs	10.1	6.4	6.7			6.3
Indonesia	5.7	7.4	7.4			6~7
Thailand	13.2	12.0	10.0			9.0
Philippines	6.4	5.6	1.6	△0.2		1~2
Malaysia	8.9	8.8	10.0	7.7	9.0	8.3
Southeast Asia	8.4	8.6	7.4			6.5
India	9.8	5.0	4.3			4.2
Pakistan	7.6	5.0	5.3			5.5
Southwest Asia	8.3	4.9	4.6			4.4
China	11.0	4.0	5.2	6.1		6.3
Asia	9.0	5.5	5.3			

Source: Economic Planning Agency, "White Paper on World Economics", p. 417.

Table 5 Trends in Foreign Investments in ASEAN Countries

(Units: millions of dollars)

	1986	1987	1988	1989	1990
Indonesia					
Japan	324.6	512.1	224.7	919.5	2,480.2
NIES	84.3	158.4	1,777.4	3,008.2	2,713.1
U.S.	128.4	−62.0	534.1	167.1	196.6
World total	800.4	1,239.7	4,425.9	5,920.2	9,813.6
Singapore *					
Japan	493.8	601.1	691.3	541.2	358.9
NIES	n.a	n.a	n.a	n.a	n.a
U.S.	443.4	543.5	586.6	520.2	849.9
World total	1,190.6	1,448.0	1,657.8	1,625.4	1,577.9
Thailand					
Japan	250.7	965.2	3,062.7	3,524.2	2,705.9
NIES	90.9	501.1	1,709.2	2,007.1	8,809.5
U.S.	40.6	172.2	673.2	549.6	1,090.9
World total	579.1	1,949.2	6,249.1	7,985.1	14,128.2
Malaysia *					
Japan	67.6	185.0	214.3	391.8	1,557.4
NIES	101.3	254.3	270.8	536.9	2,529.1
U.S.	12.5	71.1	96.5	46.8	209.7
World total	427.9	745.5	767.7	1,245.1	6,517.7
Philippines					
Japan	22.3	28.8	94.6	157.7	100.3
NIES	8.0	33.5	138.5	322.7	380.4
U.S.	22.4	36.0	152.5	131.2	59.5
World total	78.2	166.6	451.4	804.2	961.7

Note: * Only investments in manufacturing have been made public for Singapore and Malaysia.

Source: Prepared from foreign investment authorization statistics of the various countries.

Table 6 Share of Inter-regional and Intra-regional Transactions Within Total World Direct Foreign Investments and Exports for Europe, North America and East Asia

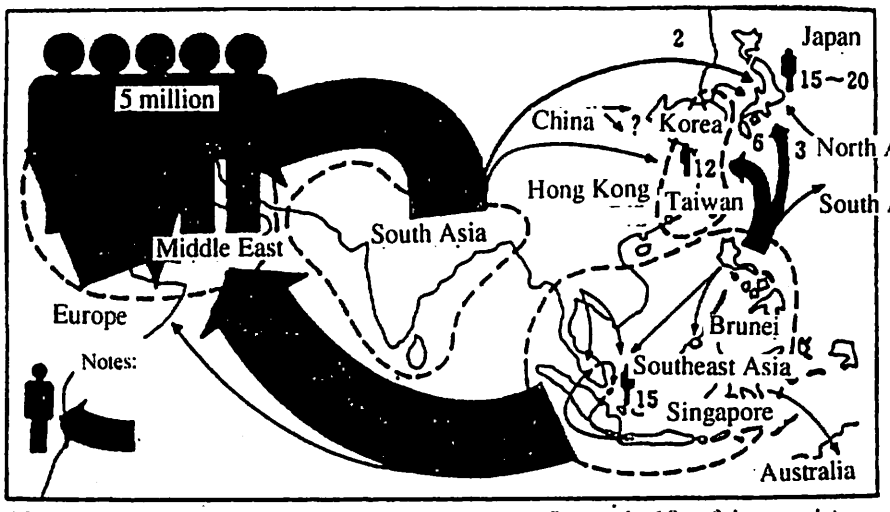
(Units: millions of dollars, %)

	Direct investments			
	1987		1990	
	Sum	Share	Sum	Share
EC/EFTA ↔ NAFTA	60,593	44.4	34,188	15.7
EC/EFTA ↔ East Asia	4,456	3.3	13,138	6.0
NAFTA ↔ East Asia	12,316	9.0	22,104	10.2
Subtotal	77,365	56.7	69,430	32.0
NAFTA intra-regional	10,248	7.5	3,545	1.6
EC/EFTA intra-regional	15,628	11.5	55,360	25.5
East Asia intra-regional	5,323	3.9	23,212	10.7
Subtotal	31,199	22.9	82,117	37.8
World total	136,393	100.0	217,240	100.0
	Exports			
	1987		1990	
	Sum	Share	Sum	Share
EC/EFTA ↔ NAFTA	190,318	7.9	257,456	7.5
EC/EFTA ↔ East Asia	145,800	6.0	235,131	6.8
NAFTA ↔ East Asia	248,027	10.2	325,834	9.4
Subtotal	584,145	24.1	818,421	23.7
NAFTA intra-regional	160,096	6.6	229,857	6.7
EC/EFTA intra-regional	768,773	31.8	1,119,012	32.4
East Asia intra-regional	169,548	7.0	279,601	8.1
Subtotal	1,098,417	45.4	1,628,470	47.2
World total	2,421,000	100.0	3,450,600	100.0

Source: JETRO, "White Paper on Direct Foreign Investments" (1992), p. 33.

Figure 1 International Migration of Labor in Asia

(1989)



Notes: Numbers of residing foreign workers (figures in 10s of thousands)
Annual numbers of migrants (figures in 10s of thousands)

Sources: Reprinted from "Discussions With Kiyoshi Mori - Labor in the Near Future" in Asahi Shimbun, January 3, 1991 (Nihon Hyoron-sha, 1991), p. 81.
Yasuo Kuwahara, "Labor Crossing Borders", (Iwanami Shoten, 1991, p. 65).