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STRUCTURAL CHANGE IN THE DEVELOPING COUNTRIES OF EAST AND SOUTHEAST ASIA

by

Dr. R. M. Sundrum

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* The opinions expressed in this paper are those of the author, and do not necessarily reflect the views of the International Bank for Reconstruction and Development.

STRUCTURAL CHANGE IN THE DEVELOPING COUNTRIES OF EAST AND SOUTHEAST ASIA

I. Introduction

1.1 The desperate need for structural change in the less developed countries is now widely accepted, both as an appropriate objective of economic and social development, and also as one of the principal means to such development. The long spell of classical economic theory which sanctioned the prevailing pattern of economy in these countries, according to an extremely static formulation of the principle of comparative advantage, has been broken, as the demands of deliberate policies of development have become clearer. The actual problem that remains for consideration is what sort of structural change the developing countries should aim for, and how best they can go about trying to achieve it as rapidly as possible. The present paper is an attempt to study the past experience of the developing countries of East and Southeast Asia, and their future problems and prospects in this connection. Before proceeding with the situation of this region itself, we might briefly cover some of the general aspects of the role of structural change in the process of economic and social development.

1.2 The process of economic development in a less-developed country generally starts off with a large part of the labour force engaged in, and a high proportion of the social product originating from, the agricultural sector. This reflects basically the low productivity of labour in general, and particularly in food production: when the individual producer is able to produce only a small surplus of food over the basic requirements of his family, only a small fraction of the labour force can be released for non-agricultural occupations. As the productivity of labour in food production increases in the process of economic development, each producer is able to produce a larger surplus over his basic requirements. It then becomes possible for the basic requirements of the population to be met by a smaller agricultural labour force.

1.3 During this process, there is also an increase in per capita income which leads to a change in the structure of aggregate demand, away from food and towards various industrial products, according to Engel's law. This means that the consumption of food stuff will increase beyond the level of basic requirements, together with a change in food consumption patterns, but generally this increase in demand for food stuff will be less than proportionate to the growth in productivity. So the result is that there will be an increase in the demand for non-food products together with an increase in the part of the labour force available for non-agricultural occupation. In its simplest form, the task of organizing this surplus labour force to produce the rising demand for industrial products is the central problem of structural change.

alternative strategies is the extent to which a country has access to markets in the developed or in other developing countries, and the degree of optimism that policy makers have in the future of trade.1/

1.7 We have so far been considering the problem of structural change largely as a matter of response to the changing pattern of demand arising from a growth of income. We should also consider the role of structural change itself as an aspect of growth. If we measure growth by productivity per labourer, then growth takes place as a result of capital accumulation and technological progress. Although these factors of growth are generally listed separately, they are, of course, closely related in the sense that technological progress is faster, the more rapid the rate of capital accumulation. For the present purpose, an important question is whether for any country with a given amount of resources, these growth processes occur faster in one sector rather than in another; and if so, what sort of structural change is most effective in exploiting these differences. Some aspects of this question are considered below in the context of the East and Southeast Asian countries.

1.8 The role of structural change in economic development has been studied at great length in the literature. The present paper is mainly devoted to a quantitative evaluation of this problem as it confronts the developing countries of East and Southeast Asia (ESEA). In section II, the recent experience of structural change in the region is presented with relevant statistical data. In section III an attempt is made to consider the prospects of the future.

1/ For the concept of trade optimism, see M. June Flanders, "Agriculture versus Industry in Development Policy: The Planners' Dilemma Re-examined" in the Journal of Development Studies April 1969, pp. 171-189.

II. The Record of Structural Change in the ESEA Region

The Countries of the Region

2.1 The region of East and Southeast Asia (which is hereafter referred to as the ESEA region) covered by this study comprises the eleven developing countries listed in Table 2.1 with their population and GDP data. It is unfortunate that the socialist countries of mainland China, Mongolia, North Korea and North Vietnam could not be included for lack of comparable data on which to base our analysis. Indonesia, with over 110 million inhabitants, by itself accounts for nearly 40 percent of the population of the region. Four countries - Burma, South Korea, the Philippines and Thailand - are of medium size by Asian standards. Four others - Cambodia, China (Taiwan), Malaysia, and South Vietnam - are small in this scale of national economies. Laos is a very small country, while Singapore is a city-state by itself.

Table 2.1 Population and Gross Domestic Product of East and Southeast Asian Countries

Country	Population (millions) 1968 estimated	Annual Rate of Population Increase 1963-67	Per Capita GDP in US 1966	Annual Rate of Growth Per Capita GDP (1960-67)	Annual Rate of Growth of Total Real GDP 1960-67
Burma	26.4	2.1	62	1.3	3.4
Cambodia	6.6	2.2	127	2.0[a]	4.7[a]
China (Taiwan)	13.5	3.0	140	7.1[b]	10.4
Indonesia	112.8	2.4	97	- 0.2	2.2
Korea	30.5	2.6	123	4.9	7.8
Laos	2.8	2.4	71	..	..
Malaysia (West)	8.8	3.0	283	2.6[c]	5.8
Philippines	35.9	3.5	250	1.6	5.1
Singapore	2.0	2.4	538	..	..
Thailand	33.7	3.1	134	4.3	7.6
S. Vietnam	17.4	2.6	111	2.7[d]	5.4
gion	290.4	2.7	132	2.1	

a/ 1960-63
b/ GDP at market prices
c/ 1960-66
d/ GDP at market prices: 1960-66
Source: UN Statistical Yearbook 1968: UN Yearbook of National Accounts Statistics 1968.

2.2 The per capita GDP for the region as a whole increased at 2.1 percent per annum during the sixties (1960-67); this appears to have been the average for all developing countries in this period. With average population growth in this region at 2.7 percent per annum, the total GDP has been increasing at 4.8 percent per annum in this region. Behind this average, however, there are two extreme positions. About half the population of the region lives in the five fast-growing countries of China (Taiwan), South Korea, Malaysia, the Philippines and Thailand; the per capita GDP for these countries increased at 3.3 percent per annum during the period 1960-67; these countries are jointly referred to as A-countries of the region in the discussion below. Another half of the population lives in the three slow-growing countries of Burma, Cambodia and Indonesia; there was practically no growth of per capita GDP in these countries, though this result was primarily due to the great weight of Indonesia, where per capita GDP declined during the period; this group of countries is referred to as B-countries of the region - in most cases this refers to Burma and Indonesia, as data for Cambodia was not available in many cases. The other countries - Laos, Singapore, and South Vietnam - are excluded from this comparison because of various special circumstances affecting each of them.

2.3 The experience of countries in this region, therefore, illustrates both the case of slow growth and of rapid growth. Many writers have noticed this great contrast and have tried to offer explanations.[1/] Some other distinctions may also be noticed from Table 2.1. While the slow-growing countries have a low per capita income, some of the fast-growing countries have relatively high incomes, such as Malaysia and the Philippines, while others have lower incomes. It is also interesting to note that the slow-growing countries also have slower rates of population growth, due most probably to high death-rates, rather than to reduced birth rates; i.e. these countries are in the earlier, rather than the late, phase of the so-called demographic transition. Conversely we also find that the fast-growing countries also have higher rates of population growth, though in some countries family planning methods have begun to lower birth-rates. The extreme case in this group is the Philippines, where, although total GDP has grown at 5.1 percent per annum, the growth of per capita GDP was reduced to 1.6 percent by the very high rate of population growth.

2.4 In the rest of this chapter, we shall consider various aspects of economic structure and structural change in some detail. In doing this, we are at the mercy of the sort of statistical information that is available, and the varying quality of such data. The data used is based largely on the various international standardized systems of data, especially those done under the U.N. auspices but even this leaves room for considerable variations in definitions and applications. We shall have to bear this in mind before drawing any strong conclusions from our analysis.

1/ See, e.g. Hla Myint, "The Inward and Outward Looking Countries of Southeast Asia". The Malayan Economic Review April 1967, pp. 1-13.

The Structure of Production

2.5 The structure of production in the countries of the ESEA region may be seen from Table 2.2 which shows the industrial origin of the GDP for the countries of this region, with some comparative figures for all developed and all developing countries.

Table 2.2 Changing Composition of GDP by Industrial Origin
(percentages)

Sector: (ISIC Code) Country (Year)	Agriculture (0)	Industry (1-3,5)	Construction (4)	Transport etc. (7)	Trade (6)	Other (2-4,8)	Total (0-8)
Burma: 1950	40	8	2	3	27	19	100
1963	32	11	1	5	33	17	100
1967	34	10	2	7	29	17	100
Cambodia: 1960	45	11	4	2	19	18	100
1963	41	12	6	2	21	18	100
1966	41	12	5	2	23	17	100
China (T): 1953	37	14	4	4	18	23	100
1963	26	24	4	5	15	26	100
1967	24	25	4	6	15	27	100
Indonesia: 1958	53	14	2	4	11	17	100
1963	54	11	2	2	18	12	100
1967	49	14	1	2	20	14	100
South Korea: 1953	49	9	2	2	12	26	100
1963	45	16	3	4	11	20	100
1967	35	20	4	6	14	20	100
W. Malaysia: 1960	38	16	3	4	16	24	100
1963	32	18	5	4	16	26	100
1966	28	21	4	3	16	27	100
Philippines: 1950	39	14	7	3	13	24	100
1963	32	22	4	4	11	28	100
1967	33	20	4	4	11	29	100
Thailand: 1953	43	13	4	5	18	16	100
1963	36	14	5	7	17	21	100
1967	31	16	6	7	20	21	100
S.Vietnam: 1960	34	12	2	5	10	31	100
1963	32	13	1	5	12	35	100
1965	29	12	1	5	11	37	100
ESEA Region 1963	40	16	3	4	16	21	100
A Countries 1963	35	19	4	5	13	24	100
B-Countries 1963	51	11	2	2	21	13	100
All Developing:	33	23	4	5	14	21	100
All Developed:	7	34	6	7	14	32	100

Source: UN Yearbook of National Accounts Statistics, 1968 Vol II: International Tables.

2.6 There is a marked difference between the A and the B countries of the region, the share of industry in the former being nearly double that in the latter. Within the A group, also, there are great differences between China (Taiwan) and the Philippines with industrial sector shares over 22 percent and the others with smaller such shares. The ESEA region as whole has a higher proportion of GDP originating in the agriculture and trade sectors, compared with all developing countries, and a lower proportion in industry. This is true even when only the A-countries of the region are considered.

2.7 Table 2.2 also gives some idea of the rate at which structural change has been taking place in the countries of this region. A rough idea of the speed of this change can be seen from the calculations shown in Table 2.3 below. It can be seen that structural change has been generally most rapid in the fast-growing countries; a significant exception is the case of the Philippines, where the rate of structural change seems to have been close to that of the slow-growing countries. It must be noted that, although the Philippines experienced a growth of total GDP at almost the same rate as the fast-growing countries of the region, it had a much slower growth of per capita GDP because of its high rate of population-growth. The case of Thailand is also noteworthy because the decline in the agriculture sector-share was made up mostly by the services sector, whereas the growth of the industrial sector was more significant in other fast growing countries.

Table 2.3 Annual Change in Percentage Shares of Output of Major Economic Sectors

Sector: Country/Period	Agriculture	Industry & Construction	Services
Burma (50-67)	- 0.35	+ 0.12	+ 0.23
Cambodia (60-66)	- 0.67	+ 0.33	+ 0.33
China (T) (53-67)	- 0.93	+ 0.79	+ 0.14
Indonesia (58-67)	- 0.44	- 0.11	+ 0.55
Korea (53-67)	- 1.00	+ 0.93	+ 0.07
Malaysia (60-66)	- 1.67	+ 1.00	+ 0.67
Philippines (50-67)	- 0.35	+ 0.18	+ 0.17
Thailand (53-67)	- 0.86	+ 0.36	+ 0.50
S. Vietnam (60-65)	- 1.00	- 0.20	+ 1.20

Pattern of Industrial Production

2.8 Because of the key role of industrialization in bringing about structural change, it would be useful to study the pattern of industrial production in some detail. Some recent data is summarized in Table 2.4

Table 2.4 Industrial Value-added by Major Groups of Industry: 1963
(Percentages)

Industry Group (ISIC Code)	World	Industrialized Countries	Less Industrialized Countries	E.S.E.A. Countries		
				All	"A" Countries	"B"
Mining (1)	8.6	6.4	21.7	13.8	13.4	15.6
Food (20-22)	12.6	11.0	17.6	33.2	30.0	37.7
Textiles (23)	4.7	4.2	8.1	7.7	7.8	6.8
Clothing (24)	4.1	4.2	3.9	2.3	2.8	0.8
Wood etc. (25-26)	3.7	3.5	3.2	3.9	4.8	2.3
Printing etc. (28-30)	4.9	5.8	4.6	9.4	6.4	14.3
Miscellaneous (39)	3.3	3.6	2.0	0.9	0.9	1.0
Sub-total:	33.3	32.3	39.4	57.4	52.7	63.0
Paper (27)	2.3	3.1	1.4	1.4	1.8	0.9
Chemicals (31-32)	9.3	10.3	11.2	10.7	10.2	12.1
Non-metals (33)	4.3	3.5	3.5	4.0	4.1	3.4
Base Metals (34)	7.0	7.1	5.0	1.2	1.9	0.1
Metal Products (35-38)	30.2	31.5	12.6	7.6	10.2	4.0
Sub-total:	53.1	55.5	33.7	24.9	28.3	20.5
Electricity & Gas	5.0	5.8	5.2	3.9	5.7	0.9
Total:	100.0	100.0	100.0	100.0	100.0	100.0

Source: UN "The Growth of World Industry" 1967 edition.

We see that food-processing is still the major type of industrial activity in the region, compared with the less-industrialized countries as a whole. This is true of both the "A" and the "B" groups of countries of the region. When food industries are excluded, the region has about the same distribution of light and heavy industries as the less-industrialized broup of countries.

2.9 The pattern of industrial production in the region may be studied in relation to population by considering the per capita value added in the various industries, for which data is shown in Table 2.5. Here again we see the great difference between the "A" and "B" countries of the region; and also the fact that industrial production in the region, and even in the "A" countries alone, is less than in all less-industrialized countries as a whole.

Table 2.5 Value Added per Capita by Major Groups of Industry:1963
(U.S.$)

Industry Group (ISIC Code)	World	Industrialized Countries	Less Industralized Countries	E.S.E.A.Countries All Countries	"A"	"B"
Mining (1)	20.3	37.5	7.5	2.5	3.5	2.1
Food (20-22)	29.3	59.7	6.8	6.2	7.8	5.2
Textiles (23)	11.7	24.4	3.6	1.2	1.6	0.9
Clothing (24)	9.5	23.5	1.4	0.4	0.7	0.1
Wood etc.(25-26)	8.5	20.0	1.1	0.7	1.3	0.4
Printing etc (28-30)	11.5	33.8	1.7	1.8	1.8	2.0
Miscellaneous (39)	7.9	20.4	0.7	0.2	0.2	0.1
Sub-total	78.4	181.8	15.3	10.5	13.4	8.7
Paper (27)	5.6	18.0	0.6	0.3	0.4	0.2
Chemicals (31-32)	21.7	59.0	3.7	2.0	2.6	1.7
Non-metals (33)	10.2	20.5	1.5	0.7	1.1	0.4
Base metals (34)	16.0	39.9	1.5	0.2	0.4	-
Metal Products (35-38)	71.6	182.5	4.2	1.3	2.5	0.6
Sub-total	125.1	319.9	11.5	4.5	7.0	2.9
Electricity & Gas	10.6	29.7	1.7	0.7	1.4	0.1
Total:	234.4	568.9	36.0	18.2	25.3	13.8

Source: UN "The Growth of World Industry" 1967 edition.

Structure of Employment.

2.10 Some idea of the structure of employment in the countries of the region is given in Table 2.6, which shows the industrial classification of the labour force.

Table 2.6 Industrial Classification of the Employed Labour Force.
(Percentages)

Country(Year) / Sector:	Agriculture	Industry & Construction	Services	Total
Burma (1953-54)	63	10	27	100
Cambodia (1962)	81	4	15	100
China (T)(1956)	55	17	28	100
Indonesia (1961)	72	8	20	100
S.Korea (1967)	55	16	29	100
W.Malaysia (1962)	54	11	35	100
Philippines (1965)	58	15	27	100
Thailand (1960)	82	4	14	100

Source: (1) I.L.O.,"Yearbook of Labour Statistics" 1968; (2) for Burma,R.M. Sundrum,"Census Data on the Labour Force and Income Distribution,1953-54" Rangoon University Economics Research Project Paper No.18.

There is a general tendency for the fast growing countries to have a relatively lower proportion of the labor force in agriculture. The proportion of the labour force in agriculture is higher than the corresponding fraction of the GDP originating in agriculture, consistent with the common tendency in the less-developed countries for productivity of labour in agriculture to be lower than in other sectors. Even taking this into account, the case of Thailand is noteworthy in having such a high proportion of the labour force in agriculture. This is, of course, partly explained by the large agricultural export sector of Thailand.

2.11 The nature of employment within industry is shown in some detail in Table 2.7.

Table 2.7 Employment per 1000 Total Population by Major Industry Groups: 1963

Industry Group (ISIC Code)	World	Industrialized countries	Less Industrialized Countries	E.S.E.A. Countries All	"A" Countries	"B" Countries
Mining (1)	4.2	6.2	1.9	1.5	2.5	1.0
Food (20-22)	8.9	12.7	6.6	9.5	7.6	11.8
Textiles (23)	9.5	9.3	9.5	6.1	4.5	7.6
Clothing (24)	6.1	10.1	3.8	1.7	3.4	0.6
Wood etc. (25-26)	4.8	7.2	3.5	2.1	3.4	1.3
Printing etc. (28-30)	3.2	7.2	1.5	2.2	1.8	2.6
Miscellaneous (39)	2.3	5.2	1.0	0.5	0.5	0.5
Sub-Total	34.8	51.6	26.0	22.1	21.2	24.4
Paper (27)	1.2	3.5	0.3	0.3	0.5	0.2
Chemicals (31-32)	3.2	6.7	1.3	1.2	1.6	1.0
Non-metals (33)	4.0	4.8	2.9	1.1	1.4	1.0
Base metals (34)	3.3	7.4	0.8	0.2	0.4	-
Metal Products (35-38)	18.4	39.5	4.9	3.0	4.4	2.3
Sub-Total	30.1	61.9	10.3	5.8	8.3	4.5
Electricity & Gas	1.4	3.1	0.6	0.5	0.6	0.4
Total:	70.5	122.8	38.8	29.9	32.6	30.3

Source: UN "The Growth of World Industry" 1967 edition.

The proportion of the total population employed in these industries is very similar in the A and B countries of the region, and in this respect, the region as a whole is fairly close to the position of all less-industrialized countries. This is in fairly sharp contrast to the position regarding per capita value added in the various branches of industry, as shown in Table 2.5. These differences must, therefore, be due mainly to differences in the productivity of labour in the two groups of countries. Some comparative data about labour productivity are given in Table 2.8 below, which shows the value added per employed person in the various branches of industry; this data is very interesting in showing such large differences in the productivity of labour in the same branch of industry in different countries.

Table 2.8 Value Added per Employed Person by Major Groups of Industry:1963.
(U S.$)

Industry Group (ISIC Code)	World	Industrialized Countries	Less Industrialized Countries	E.S.E.A.Countries All Countries	"A"	"B"
Mining (1)	4870	6056	3857	1580	1341	2168
Food (20-22)	3286	4697	1030	664	1035	442
Textiles (23)	1225	2609	379	233	418	123
Clothing (24)	1553	2324	374	237	209	163
Wood etc.(25-26)	1758	2768	314	339	378	245
Printing (28)	3928	5114	900	609	745	386
Leather (29)	2154	2972	792	563	1046	230
Rubber (30)	3623	4667	1369	978	1121	925
Miscellaneous (39)	3485	3896	686	367	420	317
Paper (27)	4539	5220	1710	767	878	563
Chemicals (31-32)	6880	8849	2895	1740	2252	1939
Non-metals (33)	2523	4237	496	656	745	470
Base metals (34)	4906	5425	1784	1139	1159	815
Metal Products (35-38)	3900	4622	912	461	590	247
Electricity & Gas	7453	9684	2974	1543	2499	300
All Industry:	3323	4633	928	622	781	457

Source: UN "The Growth of World Industry: 1967 edition.

2.12 With the above data, we can evaluate the relative importance of various factors in explaining the differences in per capita industrial output between groups of countries. This is done in Table 2.9 below:

Table 2.9 Factors explaining the Differences in Per Capita Industrial Output.
(U.S. $)

Due to:	Differences in Per Capita Industrial Output Between:- Industrialized and Less Industrialized Countries	Less-Industrialized and "A" Countries of E.S.E.A. Region	"A" and "B" Countries of ESEA Region.
1. Numbers employed in Industry	568.9 - 179.7 = 389.2	36.0 - 30,2 = 5.8	25.3 - 23.5 = 1.8
2. Distribution of employment within industry	179.7 - 155.2 = 24.5	30.2 - 36.1 = -5.9	23.5 - 24.2 = -0.7
3. Productivity of Labour	155.2 - 36.0 = 119.2	36.1 - 25.3 = 10.8	24.2 - 13.8 = 10.4
Total	568.9 - 36.0 = 532.9	36.0 - 25.3 = 10.7	25.3 - 13.8 = 11.5

Three factors are distinguished. A region may have a larger per capita industrial output because (i) it has a larger proportion of the population employed in industry, (ii) within industry, a larger proportion is employed to produce more valuable products, or (iii) industrial labour is more productive, than in another region. From the above analysis, it can be seen that between industrialized and less-industrialized countries as a whole, the main factor explaining the difference in industrial output per unit of population is the difference in the size of industrial employment. Between less-industrialized countries and the A countries of the region, and also between the A and B countries of the region, the major explanation is due to differences in the industrial productivity of labour.

2.13 Within industry, we were fortunate in getting internationally comparable data from the 1963 World Program of Basic Industrial Statistics for our study of the productivity of labour. It would be interesting to make a similar study of labour productivity for other sectors. We do not, however, have equally comparable data, and so we have made our own estimates from such data as are available. The figures are, of course, far less reliable, but the reults may prove of some suggestive value. For this purpose, some estimates of the distribution of the labour force in the year 1963 into the agricultural A, the industry M, and services S, sectors of the economy are shown in Table 2.10 below for the countries of the region. The employment in the industry sector (column 2) is taken from the 1963 industrial data mentioned above; to find the industrial employment as a percentage of the labour force, the total labour force in 1963 was estimated by applying the most recent estimate of the overall participation ratios (column 3) to UN estimates of the 1963 population. The proportion of the labour force in agriculture was derived from the most recent census data available, with minor adjustments in some cases.

Table 2.10 Industrial Distribution of Labour Force in ESEA Countries: 1963

Country	1963 Employment in Industry (000)	Participation Ratio %	Percentage of Labour Force in: M	A	S
(1)	(2)	(3)	(4)	(5)	(6)
Burma	725	33	9	61	30
China (T)	657	31	18	46	36
Indonesia	3,019	36	8	72	20
S.Korea	699	30	9	59	32
W.Malaysia	236	32	10	55	35
Philippines	1,247	32	13	60	27
Thailand	492	53	3	82	15

2.14 We can now proceed to estimate the value of output per worker in industry, in agriculture and in the economy as a whole. The output per worker in the economy as a whole, Y, is derived from the per capita national income figure by dividing by the labour force participation ratio. The output per worker in industry is given in the 1963 survey data. Then the output per worker in the other sectors, Y_{as} can be derived from the relationship

$$Y = Y_m p_m + Y_{as}(1-p_m)$$

$$\text{i.e.} \qquad Y_{as} = \frac{Y - Y_m p_m}{1 - p_m}$$

where p_m is the proportion of labour force in industry. The results are shown in Table 2.11.

Table 2.11 Output Per Worker in Industry and Other Sectors in Countries of ESEA Region (1963:U.S.$)

Country	Y	Y_m	Y_{as}	Y_{as}/Y_m	Y_a	Y_a/Y_m
Burma	179	369	160	0.43	119	0.32
China (T)	487	699	440	0.63	368	0.53
Indonesia	236	478	215	0.45	183	0.38
S.Korea	427	811	389	0.48	299	0.37
W.Malaysia	722	1429	643	0.45	447	0.31
Philippines	681	722	675	0.93	666	0.92
Thailand	185	691	169	0.24	122	0.18

2.15 A separate estimate of the output per worker in agriculture, Y_a, can be derived if we introduce an additional assumption. For instance, if we assume that the output per worker in the service sector, Y_s, is a weighted average of Y_a and Y_m,

$$\text{i.e.} \qquad Y_s = kY_m + (1-k)\,Y_a$$

then, we can estimate Y_a by the relationship

$$Y_a = \frac{Y - Y_m\left[k + (1-k)p_m - kp_a\right]}{(1-k) - (1-k)p_m + kp_a}$$

where p_a is the proportion of the labour force in agriculture. The estimate Y_{as} corresponds to the case k = o. An estimate of Y_a corresponding to the case $k = \frac{1}{2}$ is given in Table 2.11. In four of the countries, labour productivity in agriculture is about a third compared with industry, inspite of wide variations in income levels. An interesting comparison is between China (T) and Thailand, where the productivity per worker in industry is about the same, but the productivity per worker in agriculture in China (T) is three times as high as in Thailand. The Philippines represents an extreme case of nearly the same productivity in all sectors.

Urban-Rural Distribution of Population.

2.16 The urban-rural distribution of the population is an important factor which influences, and is influenced by, the structural change in an economy. To study this, some recent statistical data on the subject is given in Table 2.12 below for the coumtries of the region.

Table 2.12, Urban Population and Urbanization in ESEA Region.

Country/ Year	Proportion of Population in Cities of size over 100,000	Primacy Index P_1	Primacy Index P_2	Percentage of Population in Urban areas (1965)	Speed of Urbaniza-tion
(1)	(2)	(3)	(4)	(5)	(6)
Burma 1957/8	5.4	5.4	73	16.2	0.7
Cambodia 1962	6.9	-	100	10.5	0.9
China (T) 1965	30.4	2.3	30	60.6	1.9
Indonesia 1961	9.8	2.9	31	15.4	1.5
S.Korea 1966	30.1	3.3	43	32.8	5.1
W.Malaysia 1957	10.8	1.8	47	50.3	5.5
Philippines 1966	12.0	3.5	35	31.2	1.3
Thailand 1963	7.8	6.2	78	13.6	2.1
S.Vietnam 1965	11.0	8.7	81	20.9	2.3

Source: (1) UN Demographic Yearbook 1967; (2) UN Population Division, "Progress in the Interim Revision of Urban and Rural Population Projections," POP/SC/WP/9, Sept 1969.

Column (5) of the above table shows the proportion of the population living in urban areas, as defined by national authorities, as of 1963. This definition varies from country to country and therefore the results are not strictly comparable. An attempt has therefore been made in column (2) to compile a comparable index

of the extent of urbanization from the available data by applying a uniform criterion; this index shows the percentage of the total population living in cities of size over 100,000. It may have been interesting to consider population living in smaller sized towns, but comparable data is not available. China (T) and S. Korea are the most highly urbanized countries. This is partly due to their high level of industrialization; it may also be due to the small size of these countries. In the case of Malaysia, another small country, we have data only from 1957; apart from this, the low urban ratio is probably due to the fact that the large industrial sector is mainly connected with mining production.

2.17 A feature of the urban situation that has been found characteristic of underdeveloped countries is a high degree of primacy - i.e. a tendency for a big gap between the size of the largest city and that of the other towns of a country. This is partly due to a tendency for all industrial and commercial activities to crowd into the main city, because of poor communications from other places and because governments tend to give special preference to the main city in providing various urban facilities. This is also partly due to a general lack of commercial and industrial activities catering to the agricultural sector or the rural economy. Table 2.12 shows two indices of primacy. The index P_1 in Column (3) is the ratio of the population in the main city to the average population of two other cities next in size. The index P_2 in Column (4) is the percentage of the population of main city to the total population of all cities of size over 100,000. The highest degree of primacy occurs in the predominantly agricultural countries of Burma, Thailand and South Vietnam. The degree of primacy is quite high in the other countries too. The low primacy in Malaysia is probably because nearby Singapore has performed some of the functions of a primate city. In the case of Indonesia, the low primacy may be explained by the fact that the country should be considered as consisting of a number of ecological systems.

2.18 Column (6) of Table 2.12 shows the "speed of urbanization". The speed is measured by the difference in the rate of growth of urban and rural populations. U.N. demographers have hypothesized that this index tends to remain fairly stable and are engaged in making projections of urban population on that basis.

Structure of Foreign Trade

2.19 The relative share of the foreign trade sector and its changing importance is shown in Table 2.13 below for the countries of the region. Countries of the region generally tend to have a large foreign trade sector, the extreme case being Malaysia. There does not seem to be any significant relationship between the relative share of the foreign trade sector and the size of the country. It is interesting to note, however, that the most rapid rise in the share of foreign trade has occurred in countries such as China (Taiwan) and South Korea, where this share was initially very small.

Table 2.13 Changing Role of Foreign Trade

(Percentage Share in Gross National Product)

Country/Year	Exports	Imports
Burma		
1950	19	15
1963	16	16
Cambodia		
1963	17	21
1966	8	13
China (T)		
1953	9	14
1967	22	24
Indonesia[a/]		
1955/59	12	11
1966	16	20
Korea		
1953	2	10
1967	12	22
Malaysia		
1955	52	33
1966	41	37
Philippines		
1950	15	13
1967	18	21
Thailand		
1953	19	21
1967	20	21
South Vietnam		
1960	7	14
1966	12	27

Source: U.N. Yearbook of National Accounts Statistics 1968.
a/ percentage to GDP.

2.20 The change in the share of foreign trade may also be studied by comparing rates of growth of exports and of total production. The available data is shown in Table 2.14 below.

Table 2.14 Rate of Growth of Real GNP and Real Exports (1960 - 67)

Country	Rate of Growth (Real Terms)		
	GNP	Exports	Domestic Use Production
China (T)	10.4	20.8	8.6
S. Korea	7.8	27.7	6.7
Malaysia	5.8	5.4	6.2
Philippines	5.1	11.4	4.0
Thailand	7.6	7.9	7.5
S. Vietnam	5.4	12.6	4.7

Source: U.N. Yearbook of National Accounts Statistics, 1968.

There has been a certain amount of controversy about the role of the growth of exports in bringing about growth in the economy as a whole, i.e. about the role of foreign trade as an "engine of growth". This is a complex problem, and it is unlikely, to begin with, that there will be any single answer applicable to all types of countries at different levels of development. In any case, it is doubtful whether the answer can be obtained by any statistical correlation between rates of growth of income and of exports for a group of countries.1/ For instance, there is a correlation of 0.57 between GNP growth rates and export growth rates shown in Table 2.14. However, a positive correlation is to be expected anyway from the fact that exports are a part of GNP. What is more interesting is to see if rapid growth of exports in some countries also leads to higher growth in the other sectors of these countries. To check this, the rate of growth of production for domestic use in these countries was calculated and is shown in Table 2.14. We find that the correlation between the rate of growth of exports and of production for domestic use was only 0.16. None of these correlations are likely to be useful in revealing the actual relationship, which has to be considered case by case.

1/ See e.g. the I.B.R.D. study cited in O.E.C.D. "Development Assistance, 1968 Review" p. 127. For a sample of 40 developing countries used in this study, the correlation between growth of exports and of outputs is 0.72 but between growth of exports and domestic use production is only 0.20.

2.21 In addition to the volume of exports and imports in relation to total GNP, it is also useful to consider their composition; some data for the recent period are shown in Table 2.15 and 2.16. In the mid-fifties the exports of these countries were mainly primary products, and this is still true for most of them; though the share of manufactured exports has increased. In the case of China (Taiwan) and South Korea, industrial products now constitute more than half of all exports. The considerable proportion of industrial products in the exports of Malaysia and Thailand is mainly due to export of tin.

2.22 The imports of these countries consist predominantly of manufactures, though the share of primary products is quite high. The pattern of imports has remained fairly stable, even for China (Taiwan) and South Korea, whose exports have changed so greatly. The most significant change in import pattern has occurred in Malaysia where the import of primary products has declined considerably in importance.

Table 2.15 Changing Composition of Exports (percentages)

Group:	Agri-culture	Fuel etc.	Primary Products	Chemi-cals	Manufac-tures	Machinery& Trans.Equip.	Industrial Products	Miscel-laneous
SITC Code:	0-2.4	3	0-4	5	6 + 8	7	5-8	9
Country								
Burma								
1954	98.1	0.1	98.2	0.3	1.5	-	1.8	-
1966	95.4	0.4	95.8	0.1	4.1	-	4.2	-
China (T)								
1958-9	75.9	1.0	76.9	4.1	18.6	0.4	23.1	-
1967	41.5	0.8	42.3	3.4	44.9	9.0	57.3	0.4
Indonesia								
1954	72.8	26.7	95.5	0.3	-	0.1	0.4	0.1
1963	60.7	39.0	99.7	0.2	0.1	-	0.3	-
Korea								
1953-54	87.8	1.3	89.1	5.3	5.1	0.2	10.6	0.4
1967	32.2	0.6	32.8	0.7	62.0	4.4	67.1	0.1
Malaysia								
1953-54	62.3	12.2	74.5	1.4	20.9	2.4	24.7	0.8
1967	63.6	1.9	65.5	1.6	29.6	2.1	33.3	1.2
Philippines								
1953-54	97.9	-	97.9	0.3	1.8	-	2.1	-
1967	88.1	0.6	88.7	0.6	9.2	-	9.8	1.5
Thailand								
1954	98.8	0	98.8	0	1.2	0	1.2	0.2
1967	82.8	0.6	83.4	0.1	15.4	0.1	15.6	1.0

Source: U.N. Yearbook of International Trade Statistics, various years.

Table 2.16 Changing Composition of Imports (Percentage)

Group:	Agri-culture	Fuel etc.	Primary Products	Chemi-cals	Manufac-tures	Machinery & Trans.Equip.	Industrial Products	Miscel-laneous
SITC Code:	0-2,4	3	0 - 4	5	6 + 8	7	5 - 8	9
Country								
Burma								
1954	20.5	3.0	23.5	5.6	55.2	15.3	76.1	0.4
1966	15.3	7.1	22.4	7.8	40.3	29.4	77.5	0.1
China (T)								
1958-9	31.0	7.4	38.4	21.4	16.8	23.0	61.2	0.4
1967	31.4	4.2	35.6	12.2	18.7	33.1	64.0	0.4
Indonesia								
1954	18.6	7.6	26.2	6.3	48.7	18.6	73.6	0.2
1962	14.4	6.3	20.7	11.9	38.6	28.7	79.2	0.1
Korea								
1953/54	39.0	0.8	39.8	15.8	35.1	8.5	59.4	0.7
1967	31.2	6.2	37.4	11.3	20.2	31.1	62.6	-
Malaysia								
1953/54	56.6	19.1	66.6	3.6	20.2	8.4	32.2	1.2
1967	33.1	7.8	40.9	8.8	25.9	22.2	56.9	2.2
Philippines								
1953/54	21.3	11.1	32.4	8.2	41.9	17.4	67.5	-
1967	21.4	8.8	30.2	8.9	25.2	35.5	69.6	0.2
Thailand								
1954	13.1	8.5	21.6	7.9	49.3	20.8	78.0	0.4
1967	9.1	7.2	16.3	11.9	34.5	35.1	81.5	2.2

Source: U.N. Yearbook of International Trade Statistics, various years.

2.23 One final analysis that may be made of the foreign trade of the countries of this region is to consider the distribution of the exports between developed and developing countries. Some recent data is summarized in Table 2.17 below.

Table 2.17 Exports to Developed Market Economies[1/] as Percentage of Total Exports (1965)

Country	Percentage of Exports to Developed Market Economies: All Exports	Primary Products	Manufactures	Manufactures as % of all Export
China (Taiwan)	66.2	80.0	47.5	42.5
S. Korea	74.3	83.0	68.6	61.0
Malaysia	59.4	52.7	72.1	34.3
Philippines	95.3	95.4	93.4	5.6
Thailand	45.8	45.1	59.0	5.2

1/ Countries grouped as Economic Class I in the UN report on Commodity Imports.

Source: (1) Atsushi Murakami,"Two Aspects of the Export of Manufactured Goods from Developing Countries", The Developing Economies, September 1968, pp. 261-283. (2) Malaysia Trade Statistics 1965.

The above table is quite informative. Of the two countries whose exports consist predominantly of primary products, alsmost the entire exports of the Philippines go to the developed countries while the corresponding proportion for Thailand is less than half. The large share of developing countries in the exports of Thailand is because these exports consist so much of food items which are in deficit in many developing countries. In the case of Malaysia, as noted previously, the large share of manufactures is accounted for mainly by tin blocks; and the relatively low proportion of exports to developed countries, as shown in the above table is largely due to the fact that over 20% of the exports go to Singapore. In fact, if these exports are left out, then as much as 75% of Malaysia's exports go to the developed countries. Of the two countries, China (Taiwan) and S. Korea, which have a high proportion of manufactures in their exports, it is interesting to note a rather low proportion of their exports is sent to the developed countries. Both countries exhibit an interesting pattern in their foreign trade. Most of their primary exports to the developed countries, but their manufactured exports tend to be equally divided between developed and developing countries. Atsushi Murakami has tried to distinguish various categories of commodities, according to their principal markets.[1/]

1/ op. cit..

Resume'

2.23 At this stage, it may be useful to recapitulate the present position of the individual countries in the various aspects of structural change studied above. For this purpose, we leave out the small countries Cambodia and Laos, for which we do not really have sufficient information, and also Singapore, because of its special circumstances. We also leave out South Vietnam, because of its disturbed condition.

2.24 Burma and Indonesia have been described as the "inward-looking countries". They are among the poorest countries of the region, and have also had the lowest growth rates in the recent period. It must, however, be noted that both countries have suffered severely from economic damage during World War II and from considerable internal unrest since then. They have shown a capacity for rapid growth during particular periods. For instance, Indonesia achieved remarkable progress in the period 1955-1958. During the decade of the fifties, Burma achieved a real growth rate of GDP as high as 5.8% per annum, and a rate of growth of 14.7% per annum in industrial production.1/ In recent times, however, both countries have shown a poor record of growth for many reasons, including political unrest in Indonesia and an attempt to organize a socialist economy in Burma. The flow of external aid to these countries has only been a trickle. For the purpose of the present discussion, however, the interesting features of these countries is that both attempted a policy of import substituting industrialization largely with their own resources. While some observers have argued that the failure of this effort in these countries showed the weakness of this approach to structural change in general, it may be fairer to say that the experiment did not really get a fair trial. In any case, it does seem that the industrialization policies of these countries would have benefitted greatly from simultaneous effort in promoting agricultural development and greater build-up of infrastructural facilities. As of now, the present economic position and policy attitudes of these countries are not at all clear and until more information is available, it does not seem fruitful to speculate about their future prospects.

2.25 The five other countries of the region have all shown rapid growth in the recent period. They have also all received a substantial inflow of external assistance. Such assistance has, of course, contributed to the high rates of growth of these countries, but in the present state of our understanding it does not seem possible to say how crucial has been the role of such assistance. Apart from these common features, we have seen that there are considerable differences among these fast growing countries. Income levels are widely different; the per capita incomes in Malaysia and the Philippines are double that of the other countries, but at the same time they have grown less rapidly. While all these countries have also increased their exports at a high rate, the exports of Malaysia, the Philippines and Thailand are still predominantly of primary products and still mainly directed toward the developed countries. The very high rate of growth of exports in China (T) and South Korea, on the other hand, has included a

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1/ U.N. Yearbook of National Accounts Statistics, 1968, Table 5 B.

large expansion of exports of manufactures, with a considerable fraction going to other less developed countries. As a result, these two countries have experienced the most rapid structural change, so that their future growth is more likely to be self-sustaining, though at present South Korea, especially, would need more external assistance for strengthening its infrastructure. In the case of the other countries, while their economic growth has not led to a corresponding amount of structural change, insofar as their growth is built around their primary exports, especially to the developed countries, it raises the question of whether such growth is self-sustaining in view of the doubtful prospects of such primary products in world trade. It seems clear, therefore, that these countries need greater efforts to promote industrial development. The Philippines and Thailand have fairly large populations, compared, for example, with China (T), and may therefore be considered to have greater possibilities of industrialization by way of import substitution. But even so, they represent small markets for manufactures under modern conditions and so may find it useful to follow the example of China (T) and South Korea in building up exports of manufactures. In any such effort, some form of cooperation among themselves, of the type they are currently exploring, would certainly be useful. In bringing about satisfactory structural change in these countries, it is not sufficient to consider only the industrial sector. Improvement in the agricultural sector is also essential. This is particularly obvious in the case of Thailand, where labour productivity in agriculture is so much lower than in industry; the present high degree of urban primacy suggests that development of smaller towns to serve rural needs, and to moderate the further expansion of the metropolitan area of Bangkok-Thonburi would greatly help to modernize and improve agricultural conditions. Malaysia enjoys the advantage of a high productivity of labour in the plantation and mining sectors; its future needs are to achieve a rise in productivity in the domestic sectors, both agricultural and industrial. Productivity of labour is the same in both agriculture and industry in the Philippines; so it may be able to follow a balanced program of future growth in the two sectors.

III. Prospects and Problems of Structural Change in the E.S.E.A. Region

3.1 The long-term prospects of structural change in a country depend, at least to some extent, on its own policies and on the cooperation it gets from developed and other developing countries. As background for the consideration of such policies, it may be useful to examine alternative strategies for structural change that a country may follow. A full discussion of all such alternatives is not possible here, but as a preliminary to such a discussion, we examine one possible projection of future developments in some of the countries of the region.

3.2 One simple approach to make such a projection is to use the "normal" pattern derived by Professor Chenery and other scholars from inter-country comparisons. We shall, in fact, use the B-equations for large countries showing the cross-section results in his 1968 paper with Taylor.[1/] These equations are of the form

$$\ln x = \alpha + \beta_1 \ln y + \beta_2 (\ln y)^2 + \gamma (\ln N) \qquad (1)$$

where x is the relative share of a sector, y the per capita GNP in US $ and N is the population in millions. Chenery and Taylor estimate that

$$\beta_1 = 2.0328,\ \beta_2 = -0.1422,\ \gamma = 0.0839 \text{ for industry sector, and}$$

$$\beta_1 = -0.0368,\ \beta_2 = -0.0402 \text{ and } \gamma = -0.0238 \text{ for primary sector.}$$

We shall assume that the equation applies equally to the base period 1967 (indicated by a suffix 0) and to the final period 1985 (indicated by a suffix 1). Then we use the result

$$\ln \left(\frac{x_1}{x_0}\right) = \beta_1 \ln \left(\frac{y_1}{y_0}\right) + \beta_2 \left[\ln (y_2)^2 - \ln (y_1)^2\right] + \gamma \left[\ln N_2 - \ln N_1\right] \qquad (2)$$

to estimate x_1 from x_0. In fact, it is found that the fit of the equation to the countries of the region is rather poor. We have, therefore, used the above approach rather than apply equation (1) directly to 1985 data. The method used here amounts to assuming that the error term is the same in both periods for any country. The method was applied only to the primary and industry sectors; the share of services sector was taken as a residual.

1/ Hollis B. Chenery and Lance Taylor, "Development Patterns: Among Countries and Over Time." Review Econ. & Stats. November 1968 pp. 391-416.

3.3 We have take some provisional U.N. projections (medium variant) for 1985 population estimates. We have then derived estimates of per capita GNP in 1985 by assuming that total GNP has increased from 1967 to 1985 at 6% per annum. The data and results of the projection are shown in Table 3.1 below for the A-countries of the region.

Table 3.1 Projection of Sector Shares of GNP in Countries of E.S.E.A. Region 1967 - 1985

Country (Years)	Per Capita Income US $	Population (millions)	Share of Gross Product by Sector		
			Industry	Primary	Service
China					
1967	274	13.1	29	24	47
1985	528	19.4	38	17	45
Korea					
1967	162	29.8	24	35	41
1985	300	45.9	34	26	40
Malaysia					
1967	328	8.6	25	28	47
1985	593	13.6	31	20	49
Philippines					
1967	278	34.7	24	33	43
1985	430	64.0	30	26	44
Thailand					
1967	155	32.7	22	31	47
1985	251	57.7	34	24	42

3.4 The above projection is intended only as a basis for studying the problems of structural change that countries of the region are likely to face. Therefore, they are not to be interpreted as an estimate of what is, in fact, likely to occur in these countries over the next one and a half decades. In particular, it is not necessarily implied that countries with a faster growth than 6% per annum will experience a slow-down or that countries with a slower growth rate will accelerate their growth. Just as we are using the "normal" pattern of structural change as a basis of study, we are also using the 6% growth rate for an illustrative purpose only.

3.5 This particular model of projection is based on a division of a 6% growth rate into two parts -- one a population growth rate and another the growth rate of per capita GNP. The effect of population growth rate is shown by a constant elasticity, +.084 for industry and - 0.024 for primary sector.

The effect of per capita GNP growth is quite strongly affected by the non-linear term. The small change in the Philippines is due to the small income effect brought about by high population growth. The small change in Malaysia and to some extent also in China (Taiwan) is due to the diminishing influence of the income effect at their higher incomes levels. The large change in Thailand and Korea is mainly due to the income effect at the relatively low income level.

3.6 The extent of the change implied in the above projection may be summarized as follows:

Table 3.2 Annual Change in Percentage Share of Output in Major Economic Sectors (1967-85)

Country	Change in Sector A	IC	S
China	-.39	+.50	-.11
Korea	-.50	+.56	-.06
Malaysia	-.44	+.33	+.11
Philippines	-.39	+.33	+.06
Thailand	-.39	+.67	-.28

This table shows the extent of structural change required by the "normal" development pattern. These results may be compared with Tab.e 2.3 showing the corresponding figures for the past experience. As far as this broad comparison goes, the required change is smaller than past achievements in the case of China (Taiwan) and Korea and greater in the Philippines and, for the industrial sector, in Thailand. The required change is also smaller than past record in the case of Malaysia.

3.7 Before drawing any final conclusions on the prospects of structural change from the above comparisons, a factor to be considered is the role of foreign trade. From the data of 2.16, we can calculate the share of primary and industrial exports in GNP. The results are shown in Table 3.3 below. This shows that the large industrial sector of China (Taiwan) and South Korea is to some extent due to the high proportion of industrial products exported by these countries. Similarly the large agricultural sector of Thailand and to a large extent of the Philippines, may be attributed to the high proportion of exports of primary products. The future prospects of structural change are therefore likely to be greatly influenced by this trend in the exports

Table 3.3 Share of Primary and Industrial Exports to the GNP of E.S.E.A. Region (1967)

Country	Exports as Percentage of GNP	
	Primary Products	Industrial Products
China	9.46	12.54
Korea	3.96	8.04
Malaysia	27.06	13.94
Philippines	16.20	1.80
Thailand	16.80	3.20

of these countries. If their agricultural exports do not expand as rapidly as in the past, then the Philippines and Thailand would have to place greater emphasis on the expansion of their industrial sector. In the case of China (Taiwan) and South Korea, it was found that while manufactures were a high proportion of total exports, a considerable part of their exports of manufactures went to other developing countries - the future prospects of these exports therefore depend considerably on the economic growth of these countries and the extent to which they depend on imports of such manufactures. In the case of Malaysia, both primary and industrial sectors have largely been producing for export a considerable part of the industrial exports being in the form of processing of tin. If foreign demand for these exports should fall off, a greater effort would have to be made for increasing production in both primary and industrial sectors for domestic consumption.

3.8 We have so far been considering the changes in the share of output originating in the different sectors of the economy. From the employment point of view, these changes can be divided into two parts - the change in the productivity of labour in these sectors and the change in the allocation of labour to these sectors. A method of studying these two aspects is suggested by the analysis given by Professor Kuznets in his 1957 paper.[1/] We define the following symbols:

P_i = share of output in agriculture;

M_i = share of output in non-agriculture;

C_i = share of labour in agriculture;

D_i = share of labour in non-agriculture;

i = 0 in base year 1967; = 1 in final year 1985

1/ S. Kuznets, "Quantitative Aspects of the Economic Growth of Nations: II. Industrial Distribution of National Product and Labour Force." Economic Development and Cultural Change July 1957 Supplement.

r_t = rate of increase of labour productivity in whole economy

r_a = rate of increase of labour productivity in agriculture

i.e.

$$r_a = \frac{P_1 C_0 (1 + r_t)}{P_0 C_1} - 1$$

r_b = rate of increase of labour productivity in non-agriculture

i.e.

$$r_b = \frac{M_1 D_0 (1 + r_t)}{M_0 D_1} - 1$$

x = shift of labour from agriculture to non-agriculture

i.e.

$$x = C_0 - C_1 = D_1 - D_0$$

3.9 Suppose we take $r_a = A\, r_b$ throughout the period 1967-85. Let us consider three cases:

A = 1.0 a balanced development of productivity;

A = 0.5 an industry-oriented development;

A = 1.5 a primary oriented development.

For each of these cases we wish to consider the extent of the shift x.

3.10 By making a number of rough adjustments, the share of output and of labour in the two major sectors as of 1967 are estimated as shown in Table 3.4 below. The latter also shows the output shares as of 1985, derived in Table 3.1 on the assumption of a normal pattern of growth. As a rough approximation to r_t, the table shows the percentage growth of per capita output also derived in Table 3.1.

Table 3.4 Basic Data for Estimating Shift of Labour Force 1967 - 85
(percentages)

Country	P_0	P_1	M_0	M_1	C_0	D_0	r_t
China	24	17	76	83	43	57	93
Korea	35	26	65	74	55	45	85
Malaysia	28	20	72	80	50	50	81
Philippines	33	26	67	74	60	40	55
Thailand	31	24	69	76	68	22	62

From this data, the shift factor is calculated and shown in Table 3.5 below.

Table 3.5 Shift of Labour Force 1967-85
(percentage)

Country:	Shift Factor A= 0.5	A= 1.0	A= 1.5	Growth of Agricultural Productivity A= 0.5	A=1.0	A= 1.5
China (Taiwan)	3.5	10.1	14.1	49	79	103
Korea	3.8	10.6	14.8	47	70	88
Malaysia	5	11	15	44	66	85
Philippines	3	8	11	29	41	50
Thailand	3-	7	9	30	38	42

3.11 It is useful to compare the shift of labour force between agriculture and other sectors with the increase in the urban ratio projection on the basis of the speed of urbanization defined in Section 2.12. The results are shown in Table 3.6 below.

Table 3.6 Increase in Urban Ratio (Percentage)

Country:	Urban Ratio 1965	1985	Increase
China (Taiwan)	60.6	69.0	8.4
Korea	32.8	56.6	13.8
Malaysia	50.3	74.9	24.6
Philippines	31.2	36.5	5.3
Thailand	13.6	18.9	5.3

3.12 The above analysis has been based on the assumption of a "normal" pattern of structural change, as defined in the present context. This does not, of course, imply that this is optimal for any of the countries of the region. Whatever may be the desired pattern of structural change, the present analysis may suggest the role of some of the significant issues and the sort of problems that may arise, and in turn suggest modifications of the desired pattern of structural change itself. The key elements studied here are the rates at which it is attempted to increase productivity in the two sectors of the economy and the extent of the shift of population and labour from one sector to another. This may be thought of as the distinction between widening and deepening of the industrial sector. The study of these elements would help in forming suitable long-range policies about infrastructural investment, educational and training programs, and other aspects of capital accumulation. The rate of increase of productivity in any sector depends on the rate of capital accumulation and on the rate of technological progress. For instance, the "green revolution" may make it easier to increase productivity in agriculture in many of these countries. This would be particularly applicable in cases where agricultural productivity is lagging. The question of allocation of investment to the two sectors has been the subject of considerable discussion already, especially on the question of whether there is an excessive allocation to the industrial sector or not. The present type of analysis may be useful in this connection as a way of quantifying some aspect of long-term policy needed for this problem.