

GROWTH AND UTILIZATION OF LABOR IN THAILAND

By Pichai Charnsupharindr*

Against the impressive performance of the Thai economy and the average annual population growth of over 2.5 per cent per annum the past three decades, this paper looks into whether the economy has provided better job opportunities to the people. The focus of the discussion is the changes in the level of labor absorption of each sector of production in the Thai economy, including the factors which determine these changes. Such aspects as population growth, labor force participation, labor absorption by region, and educated unemployment are analyzed.

Generally, the analysis shows that in spite of three decades of sustained growth, unemployment and underemployment are still major problems. Based on the findings, the paper recommends that the government undertake measures to reduce the population growth to less than 2 per cent per annum in the 1980s, to lessen income disparity between regions through industrial development in the rural areas, to enhance agricultural productivity, to promote industries which have a high employment absorption rate of income, and restructure the educational system to make it more responsive to labor demands.

I. Introduction

The Thai economy performed considerably well in the 1950s and gained its momentum in the 1960s. The average real annual growth rate during those periods were 5.24 per cent and 7.26 per cent, respectively. Furthermore, the economy also enjoyed two decades of relative stability with low inflation rate, as a result of the favorable international economic situation, and high saving and investment generated by both domestic and foreign capital inflows. Although domestic resources played a significant role in the development of the Thai economy, the assistance from the United States in terms of grant-in-aid and military expenses during the 1960s and foreign direct investment, particularly from Asian countries such as Japan, in the latter half of the 1960s, also played a major role in the development of the Thai industrial sector. In the 1970s, however, due to the unfavorable international economic situation, Thailand as well as other countries experienced a decade of instability with high inflation and recession. This was due mainly to: a) the United States policy toward suspension of the convertibility of the US

*Professor of Economics, Thammasat University.

dollar into gold or other reserve assets in 1971 and, b) two oil price hikes in 1973 and 1979. Although the Thai economy, whose imports and exports combined consist of more than 40 per cent of GNP, was affected by the changing international order, the real average annual growth rate was registered at 6.49 per cent in that decade.

With three decades of sustained growth, the Thai economy was gradually transformed from a traditional agriculture-dominated economy to a modern economy. The industrial and service sectors combined increased its share in GDP from 55 per cent in 1950 to 74.9 per cent in 1980. This was the result, to a large extent, of the government industrialization policy which encouraged import substitution-oriented type of industries in the 1960s. Although export promotion was vigorously introduced in the 1970s, it produced little success. With this basic import-substitution policy of industrialization, importation of consumer goods had been replaced largely by intermediate inputs. This was so because most of the import substitution industries were assembly industries in which value added was low but import dependence was high. Consequently, the country had suffered a widening balance of trade deficit in the past decades.

Against this impressive performance of the Thai economy and against the average population growth rate annually of over 2.5 per cent in the past three decades, it is interesting to know whether the economy has actually provided better job opportunities to the people. The main objective of this paper, therefore, is to investigate the changes in the level of labor absorption of each sector of production and factors which determine those changes. A detailed analysis of the population growth, labor force participation, labor absorption by region and educated unemployment will also be pursued.

2. Data

Since the nature of employment in Thailand as well as in many other developing countries is characterized by short-term contracts, instability and seasonality, the western concept of employment wherein the respondent is asked to review his employment situation in one reference week cannot adequately reflect the true picture of the employment situation (Oshima, 1976). Furthermore, the definitions of employed and unemployed persons in the Thai population census are varied and inconsistent within the whole series. The 1947 and 1960 census treated farmers "waiting for the season to begin" as employed while the 1970 and 1980 census treated them as un-

employed. At the same time, persons who were employed at any given time within the past twelve months were treated as employed in the sectoral figures in all of the series. In effect, the persons "waiting for season to begin" were treated as employed.

In order to correct the inconsistency in the aggregate and sectoral data and between each census data, the writer decided to treat "persons waiting for the season to begin" as employed persons. Secondly, the conventional method used to correct the degree of underutilization of labor was to compute the full-time equivalent of the labor force. However, there are cases like Thailand wherein the adjusted employment figure turns out to be bigger than the unadjusted one (Spoelstra and Isarangkun, 1976), which can be interpreted as an underutilization of the Thai labor force. In view of this deficiency in the census data, the problem of labor underutilization will be investigated by using the labor force survey data. Since 1977, the labor utilization concept has been used in the labor force survey. Persons who were in the labor force were divided into fully utilized and underutilized in which underutilized persons were further classified into unemployed and underemployed. Underemployed persons were identified by three different criteria, namely income, hours of work and mismatch. In short, persons who earn less than a certain amount of income, or work less than a certain number of hours a day, or is employed in a job that required a lower educational attainment, would be classified as underemployed.

In addition, the whole series of labor force surveys would be used to supplement whatever detailed information was needed.

3. Supply of Labor

The state of the labor supply is investigated in this section by looking at the following information: 1) size of population and its growth, 2) working age population, 3) labor force participation rate, and 4) unemployed and underemployed persons.

3.1 Population

The population in Thailand in 1947, 1960, 1970 and 1980 and its corresponding growth rate are presented in Tables 1 and 3, respectively. Total population increased from 17.4 million in 1947 to 44.8 million in 1980, representing an average increase of 2.67 per cent per annum. The absolute increase of 27.4 million in the past 33 years was considered very high as compared to the population in

Table 1 — Total Population of Thailand by Area and Sex, 1947, 1960, 1970 and 1980

Sex and area	1947		1960		1970		1980	
	thousand	per cent	thousand	per cent	thousand	per cent	thousand	per cent
1. Men and women								
Whole kingdom	17,443	100.0	26,258	100.0	34,397	100.0	44,825	100.0
Bangkok — Thonburi Changwats	1,179	6.8	2,136	8.1	3,077	8.9	4,697	10.5
Other changwats	16,264	93.2	24,122	91.9	31,320	91.9	40,128	89.5
Bangkok — Thonburi municipality	na	—	1,703	6.5	2,495	7.2	4,697	10.5
Other municipalities	na	—	1,570	6.0	2,058	6.0	2,935	6.5
Non-municipal areas	na	—	22,985	87.5	29,844	86.8	37,192	83.0
2. Men								
Whole kingdom	8,722	100.0	13,154	100.0	17,124	100.0	22,329	100.0
Bangkok — Thonburi Changwats	612	7.0	1,089	8.3	1,520	8.9	2,292	10.3
Other changwats	9,101	93.0	12,065	91.7	15,604	91.7	20,037	89.7
Bangkok — Thonburi municipalities	na	—	867	6.6	1,229	7.2	2,252	10.3
Other municipalities	na	—	799	6.1	7,028	6.0	1,452	6.5
Non-municipal areas	na	—	11,488	87.3	14,867	86.8	18,584	83.2
3. Women								
Whole kingdom	8,721	100.0	13,104	100.0	17,274	100.0	22,496	100.0
Bangkok — Thonburi Changwats	567	6.5	1,048	8.0	1,556	9.0	2,405	10.7
Other changwats	8,154	93.5	12,056	92.0	15,718	91.0	20,091	89.3
Bangkok — Thonburi municipality	na	—	336	6.4	1,266	7.3	2,405	10.7
Other municipalities	na	—	771	5.9	1,030	6.0	1,483	6.6
Non-municipal areas	na	—	11,497	87.7	14,978	86.7	18,607	82.7

Sources: 1947 and 1960 census data from Spoelstra and Isarakun, "Labor Absorption in Thailand," *Philippine Economic Journal*, Vol. XV, 1976, Table 1; 1970 and 1980 census data from National Statistical Office, Office of the Prime Minister, Thailand.

1850 which was only 5.5 million (Ingram, 1971). However, when the growth figures were broken down into three periods, it showed a decreasing trend. It dropped from 3.2 per cent during 1947-1960 to 2.68 per cent during 1960-1970 and further down to 2.63 per cent during 1970-1980. This decreasing trend was a result of the government efforts to bring down population growth in the latter half of the 1960s. Nevertheless, that prevailing rate of growth was still high, taking into account the economic situation of Thailand and the world in the 1980s. It was unlikely that the world economy in the 1980s could be as favorable as the golden age of the 1960s. With the depletion of natural resources, especially the arable agricultural lands, combined with the decreasing trend of the world price of agricultural products, the future prospect is not very bright for Thailand.

Although the average rate of growth showed a decreasing trend, the population increased from an annual average of .67 million during 1947-60 to .81 million during 1960-70 and reached 1.04 million during 1970-80 (see Table 2). It certainly was not an easy task for the government to provide adequate basic needs for an additional 1 million people each year. Comparing the population growth by region, a municipal area had a higher rate of growth. The population of Bangkok Metropolis (Bangkok and Thonburi) increased from 1.7 million in 1960 to 2.4 million in 1970 and reached 4.8 million in 1980, representing an annual average growth of 3.78 per cent during 1960-70 and 6.12 per cent during 1970-80.

High population growth and migration are the major factors causing the rapid expansion of Bangkok Metropolis. In spite of the government's efforts to develop this capital city, the socioeconomic problems continue to mount. Although open unemployment is still relatively low, it continues in a rising trend. The inadequate supply of utilities, housing and transport facilities rises with increasing social problems. Slums, squatters and traffic congestion are prevalent in the city. With the sinking of the city due to excessive utilization of well water in the suburban areas and with the poor drainage system, the city experienced a series of floods in recent years. In late 1983, a large portion of the city was under water for more than three months. Furthermore, crime rate was also on the rise. In view of all these mounting problems, the most likely way to lessen the pressure was to slow down the population growth by means of checking the number of migrants to the city. Since the major factor in rural-urban migration is the income differential between these two regions, the solution, therefore, is to put more efforts on rural development,

Table 2 — Average Annual Absolute Increase of the Total Population of Thailand by Area and Sex, 1947, 1960, 1970 and 1980

Sex and area	1947-1960 (thousand)	Per cent	1960-1970 (thousand)	Per cent	1970-1980 (thousand)	Per cent	1947-1970 (thousand)	Per cent	1947-1980 (thousand)	Per cent
1. Men and women										
Whole kingdom	678.1	100.0	813.9	100.0	737.1	100.0	1,042.8	100.0	829.8	100.0
Bangkok — Thonburi Changwats	73.6	10.9	94.1	11.6	82.5	11.2	162	15.5	106.6	12.8
Other changwats	604.5	89.1	719.8	88.4	654.6	88.8	880.8	84.5	723.2	87.2
Bangkok — Thonburi municipality	—	—	79.2	9.7	—	—	220.2	21.1	—	—
Other municipalities	—	—	48.8	6.0	—	—	87.8	8.4	—	—
Non-municipal areas	—	—	685.9	84.3	—	—	734.8	70.5	—	—
2. Men										
Whole kingdom	340.9	100.0	398	100.0	365.3	100.0	520.5	100.0	412.3	100.0
Bangkok — Thonburi Changwats	36.7	10.8	43.1	10.9	39.5	10.8	77.2	14.8	50.9	12.3
Other changwats	304.2	89.2	353.9	89.1	325.8	89.2	443.3	85.2	361.4	87.7
Bangkok — Thonburi municipalities	—	—	36.2	9.1	—	—	106.3	20.4	—	—
Other municipalities	—	—	22.9	5.8	—	—	42.4	8.1	—	—
Non-municipal areas	—	—	337.9	85.1	—	—	371.7	71.4	—	—
3. Women										
Whole kingdom	337.2	100.0	417	100.0	371.9	100.0	522.2	100.0	417.4	100.0
Bangkok — Thonburi Changwats	37	11.0	50.8	12.2	43	11.6	85.3	16.3	55.6	13.3
Other changwats	360.2	89.0	366.2	87.8	328.9	88.4	437.3	83.7	361.7	86.7
Bangkok — Thonburi municipality	—	—	43	10.3	—	—	113.9	21.8	—	—
Other municipalities	—	—	25.9	6.2	—	—	45.3	8.7	—	—
Non-municipal areas	—	—	384.1	83.5	—	—	362.9	69.5	—	—

Source: Table 1.

Table 3 — Population Growth Rates by Sex and Area, 1947-1980

	1947-1960	1960-1970	1970-1980	1947-1970	1947-1980
1. Men and women					
Whole kingdom	3.20	2.68	2.63	2.84	2.67
Bangkok — Thonburi Changwats	4.68	3.61	4.77	3.87	3.63
Other changwats	3.08	2.60	2.47	2.75	2.56
Bangkok — Thonburi municipality	na	3.78	6.12	—	—
Other municipalities	na	2.69	3.52	—	—
Non-municipal areas	na	3.28	2.22	—	—
2. Men					
Bangkok — Thonburi Changwats	4.54	3.30	4.05	3.70	3.51
Other changwats	3.10	2.56	2.49	2.75	2.57
Bangkok — Thonburi municipality	na	3.45	6.04	—	—
Other municipalities	na	2.51	3.42	—	—
Non-municipal areas	na	2.56	2.22	—	—
3. Women					
Bangkok — Thonburi Changwats	4.48	3.90	4.31	4.05	3.74
Other changwats	3.05	2.64	2.44	2.76	2.56
Bangkok — Thonburi municipality	na	4.09	6.21	—	—
Other municipalities	na	2.88	3.61	—	—
Non-municipal areas	na	2.63	2.16	—	—

Source: Table 1.

Table 4 — Population Aged 11 Years and Over, Whole Kingdom, by Labour Force Status, 1947, 1960, 1970, 1980
(in thousands)

Sex and Status	Working-Age Population				Average Annual Absolute Change													
	1947	Per cent	1960	Per cent	1970	Per cent	1980	Per cent	1947-1960	Per cent	1960-1970	Per cent	1970-1980	Per cent	1947-1980	Per cent		
Men and Women																		
1. Population	11,852	100.0	17,311	100.0	22,462	100.0	32,360	100.0	420	100.0	515	100.0	989.6	100.0	461	100.0	621	100.0
2. In labour force	9,743	82.2	13,837	79.9	16,850	75.0	21,751	67.3	315	75.0	301	58.4	494.1	49.9	309	66.9	365	58.7
Employed	9,743	82.2	13,749	79.4	16,623	74.0	21,090	65.2	308	73.3	287	55.7	446.7	45.1	529	100.1	344	55.4
Unemployed	n.a.		88	.5	227	1.0	701	2.2	—	—	13.9	0.1	47.4	4.8	—	—	—	—
3. Not in labour force	2,109	17.8	3,428	19.8	5,257	23.4	9,840	30.4	101	24.0	183	5.5	468.3	46.3	137	29.6	234	37.7
4. Unknown	n.a.		46	.3	354	1.6	71	2.2	—	—	31	5.9	-28.3	2.6	—	—	—	—

Sources: 1947, 1960 Census data from Spoelitra and Isarangkun, "Labor absorption in Thailand," PEJ, Vol. XV, 1976, Table 3; 1970, 1980 Census data from National Statistical Office, Office of the Prime Minister, Thailand.

especially in the northeastern and northern parts which are the poorest regions in Thailand.

3.2 Working Age Population

The working age population and its corresponding growth rate are presented in Tables 4 and 5, respectively. This group increased from 11.8 million in 1947 to 32.3 million in 1980, representing an annual average increase of 2.81 per cent. Out of that working age population, there were 9.7 million in 1947 and 21.7 million in 1980 who actively participated in the labor market.

The average growth of the labor force during 1947-80 was 2.3 per cent annually. If the growth figures were broken down into three separate periods, namely 1947-60, 1960-70 and 1970-80, the average annual growth varied between 2 and 2.74 per cent, resulting in an average yearly increase of about 300,000 during 1947-70 and 500,000 during 1970-80. Although the labor force had increased, the labor force participation rate consistently declined from 82 per cent in 1947 to 67 per cent in 1980. This could be due to the increase in per capita income and the massive increase of secondary and higher education in the late 1960s and 1970s. It was, therefore, expected that educated labor participation would increase in the 1980s. Female labor force participation rate was lower as compared to the overall rate and it also suffered a declining trend. Although female labor force participation rate dropped from 79 per cent in 1947 to 60 per cent in 1980, it was still considered high as compared to many other countries. (See Table 6.)

Despite the fact that educated unemployment was statistically low, the news reports in late 1983 showing thousands of applicants to a few hundred posts or people accepting jobs with a much lower education requirement, all indicated the seriousness of the problem. And with the projected increase of the supply of labor with higher educational attainment in the 1980s, industries and services sectors which absorbed most of them had to expand quickly in order to tackle that problem.

3.3 Degree of Labor Absorption

About 99 and 97 per cent among the working age population who actively participated in the labor force were employed in 1960 and 1980, respectively. The unemployment rate increased from about 1 per cent in 1960 to 3 per cent in 1980. Since the existin

Table 5 — Growth Rates for Selected Working Population and Labor Force Magnitudes, Whole Kingdom, by Sex, 1947-1980

	1947-1960	1960-1970	1970-1980	1947-1970	1947-1980
Men and Women					
Population	2.96	2.6	3.61	2.63	2.81
In labour force	2.74	2.0	2.55	2.32	2.32
Not in labour force	3.81	4.2	6.07	3.72	3.92
Men					
Population	2.98	2.47	3.61	2.65	2.79
In labour force	2.74	2.20	2.80	2.42	2.44
Not in labour force	4.07	3.17	6.02	3.45	3.78
Women					
Population	2.94	2.71	3.61	2.73	2.83
In labour force	2.73	1.70	2.27	2.22	2.17
Not in labour force	3.61	4.92	6.11	3.89	4.01

Source: Computed from Table 3.

Table 6 — Female Population, 11 years and over, Whole Kingdom, by Labour Force Status, 1947, 1960, 1970, 1980
(in thousands)

Status	Working Age Population				Average Annual Absolute Changes													
	1947	Per cent	1960	Per cent	1970	Per cent	1980	Per cent	1947-1960	Per cent	1960-1970	Per cent	1970-1980	Per cent	1947-1980	Per cent		
Women																		
1. Population	5,950	100.0	8,669	100.0	11,382	100.0	16,396	100.0	209.2	100.0	271.3	100.0	501.4	100.0	286.2	100.0	316.5	100.0
2. In labour force	(4,715)	79.2	6,692	77.2	7,939	69.8	9,976	60.8	152.1	72.71	124.7	46.0	203.7	40.63	140.1	59.35	1159.4	50.35
Employed	(4,715)	79.2	6,657	76.8	7,861	69.1	9,689	59.1	149.4	71.42	120.4	44.4	182.8	36.5	136.8	57.9	150.7	47.6
Unemployed	n.a.		36	0.4	78	.7	287	1.8	—	—	4.2	1.5	20.9	4.2	—	—	—	—
3. Not in labour force	(1,235)	20.8	1,958	22.6	3,234	28.4	6,075	37.1	55.6	26.59	127.6	47.0	284.2	56.68	86.9	36.80	146.7	46.34
4. Unknown	n.a.		19	.2	208	1.8	42	.3	1.5	.69	18.9	7.0	16.6	-3.31	9.0	3.83	1.3	.40

Sources: 1) 1947, 1960 Census data from Spoelstra and Sarangkum, "Labor absorption in Thailand," PEJ, Vol XV, 1976, Table 5; and 2) 1970, 1980 Census data from National Statistical Office, Office of the Prime Minister.

Table 7 -- Employed Population 11 years of age and over by Major Industry Group and Work Status, 1960, 1970 and 1980
(in percentage)

Employed men and Women	Employer		Employee						Unpaid family worker		Unknown							
	1960	1970	Own account worker		Government		Private		1960	1970	1980	1960	1970	1980				
			1960	1970	1980	1960	1970	1980										
All sectors	0.32	0.36	0.17	25.66	29.64	30.48	3.55	4.67	6.88	8.30	10.93	13.40	58.01	53.66	48.92	0.20	0.74	0.15
1 A Sector	0.17	0.15	0.06	30.31	30.97	33.06	0.02	0.04	0.09	3.09	4.06	3.65	66.40	64.44	63.10	0.00	0.35	0.04
2 M Sector	1.52	1.45	0.71	28.23	22.88	22.89	11.71	8.70	9.40	46.0	58.21	58.90	12.56	7.92	7.85	0.02	0.83	0.24
Mining	1.14	0.47	0.66	15.98	8.83	19.24	1.90	1.31	1.96	61.89	76.59	63.90	19.09	8.93	14.07	-	3.87	0.16
Manufacture	1.80	1.83	0.86	31.01	22.84	21.82	2.44	3.60	3.28	47.87	59.13	62.93	16.87	12.06	10.86	0.02	0.54	0.26
Construction	1.40	1.84	0.82	14.57	16.99	19.50	36.31	3.52	0.80	18.98	11.22	3.12	2.35	2.07	2.90	0.04	0.40	0.21
Utilities	0.36	0.14	0.04	3.17	1.70	1.02	76.74	86.44	95.31	18.98	11.22	3.12	0.73	0.23	0.34	0.01	0.28	0.18
Transport	1.00	0.66	0.26	30.52	33.52	33.06	23.47	20.24	24.70	40.50	42.88	39.42	4.50	1.74	2.31	0.02	0.96	0.24
3 S Sector	0.88	1.05	0.35	30.31	26.78	19.50	27.71	30.84	37.80	15.88	24.00	37.80	25.21	15.75	17.73	0.01	1.57	0.19
Commerce	1.09	1.63	0.51	46.05	49.68	51.65	0.32	0.95	0.18	12.04	16.91	13.54	40.29	29.74	33.92	0.01	1.09	0.21
Services	0.63	0.63	0.22	11.33	9.84	8.15	60.32	52.95	69.30	20.45	29.24	17.98	7.26	5.41	4.18	0.02	1.93	0.17
Unknown	0.04	1.02	0.16	0.75	7.42	7.24	0.38	19.89	0.88	87.37	45.04	85.89	0.43	3.29	3.39	11.03	23.34	2.46

Source: Population Census 1960, 1970 and 1980, National Statistical Office, Office of the Prime Minister, Thailand.

business activities were mostly of self-employed, short-term and informal nature, unemployment figures were, therefore, extremely low. In a developing country like Thailand, the majority are poor and can ill afford to be unemployed. When they cannot find a permanent job, they will take up an informal type of work. It is well recognized that the labor problem facing Thailand is more of underemployment than unemployment

In the absence of labor utilization data, Lawrence Chau (1976) suggested that the data on the employment status of the labor force can roughly indicate the degree of labor utilization. A supply-determined type of employment is likely to have a higher degree of underemployment as compared to demand-induced type of employment. In general, the self-employed is classified as the first category while wage and salary earners are classified as the second category. Following this line of thought, the Thai labor force is believed to have a high degree of underemployment since own account workers and unpaid family workers accounted for about 80 per cent of the total labor force. However, it decreased from 87 per cent in 1960 to 79 per cent in 1980 (see Table 7). By sector, the self-employed comprised more than 90 per cent and more than 80 per cent in agriculture and commerce, respectively; it comprised the least in the utilities sector. In sum, Thailand being an agriculture-dominated economy in which self-employment is a predominant characteristic, the degree of underutilization of its labor force is believed to be high.

Since 1977, the National Statistical Office has employed the labor utilization concept in the labor force survey. The survey is conducted twice a year — Round I during the slack season (January-March) and Round II during the harvest season (July-September). Since farmers "waiting for season to begin" are excluded from the labor force by the survey, labor force participation and unemployment rates are expected to be higher in Round II as compared to Round I. The utilization of labor is presented in Table 8. The percentage share of adequately utilized labor increased while underutilized persons decreased during 1977-81. The underutilization rates dropped from 29.4 per cent in 1977 to 21.2 per cent in 1981 (Round I figure), or from 31.3 per cent in 1977 to 18.9 per cent in 1981 (Round II figure). However, the unemployment rates increased from 5.2 per cent in 1977 to 19.8 per cent in 1981 (Round II figure). The students comprised the biggest group of persons who were not in the labor force. In sum, the Thai employment figure showed that the industrialization had gradually changed the structure of

Table 8 — Utilization of Labour of Population Aged 11 and Over
(in thousands)

Utilization of Labour	Round I		Round II	
	1977	1981	1977	1981
1. Total population	28,688.5	33,130.9	29,020.3	33,505.9
(Per cent of total)	100.0	100.0	100.0	100.0
2. Persons in labour force	16,177.9	17,699.1	20,475.8	24,576.6
(Per cent of total)	56.4	53.4	70.6	73.4
2.1 Adequately utilized	11,205.5	13,719.3	13,021.7	19,716.8
(Per cent of labour force)	69.3	77.5	63.6	80.2
2.2 Inadequately utilized	4,761.9	3,758.5	6,415.8	4,648.5
(Per cent of labour force)	29.4	21.2	31.3	18.9
2.3 Unemployed	210.5	316.3	1,060.5	4,860.1
(Per cent of labour force)	1.3	1.8	5.2	19.8
3. Persons not in labour force	12,509.6	15,429.2	8,543.3	8,925.8
(Per cent of total)	43.6	46.6	29.4	26.6
3.1 Work around house	2,401.8	2,131.7	2,010.4	1,638.4
(Per cent of those not in labour force)	19.2	13.8	23.5	18.4
3.2 Student	4,403.5	5,807.6	4,135.7	5,042.6
(Per cent of those not in labour force)	35.2	37.6	48.4	56.5
3.3 Waiting for agricultural season	3,992.0	5,644.3	694.9	188.4
(Per cent of those not in labour force)	31.9	36.6	8.1	2.1
3.4 Other	1,706.0	11,840.3	1,696.5	2,052.4
(Per cent of those not in labour force)	13.6	11.9	19.9	23.0

Sources: Labor Force Survey, 1977 and 1981 (Rounds I and II), Table 2, National Statistical Office, Office of the Prime Minister.

labor utilization toward lesser underemployment but larger open unemployment.

4. Economic Growth and Labor Absorption

Since 1950, the Thai economy has enjoyed three decades of sustained economic growth. As shown in Table 9, average annual growth rate of GDP in real terms was 5.24 per cent in the 1950s, 7.26 per cent in the 1960s and 6.45 per cent in the 1970s. Consequently, GDP increased from 41 billion baht in 1950 to 294.3 billion baht in 1980. The economy has been transformed considerably from agriculture (A sector), to industry (M sector) and services (S sector). The A sector had decreased its share in GDP from 45.1 per cent in 1950 to 25.1 per cent in 1980. Meanwhile the M and the S sectors had increased from 21.9 per cent and 33.1 per cent in 1950 to 36.6 per cent and 38.3 per cent in 1980, respectively. It is interesting to note that the utilities sector enjoyed the highest rate of growth throughout the past three decades, followed by the construction, commerce and manufacturing sectors. Least in growth performance was the agricultural sector.

The growth of employment is closely related to the growth of national product, although there are a host of other variables involved in the interacting process other than those two variables, such as capital, technology, and public infrastructure. Table 10 shows the number of employed population in 1947, 1960, 1970 and 1980 and its growth. The average employment growth during 1940-80 was 2.53 per cent annually, and this is broken down as follows: 2.61 per cent, 1.68 per cent and 3.71 per cent for 1947-60, 1960-70 and 1970-80, respectively. As a result, the number of employed (aged 15 years old and over) increased from 8.9 million in 1947 to 21.8 million in 1980. Using as basis those 11 years old and over, the employment figure increases from 13.7 million in 1960 to 23.2 million in 1980. The employment figure also showed a gradual change in employment structure from the A sector to the M and S sectors; however, the process was somewhat slow compared to the change in the productive structure. The share of employment in the A sector dropped from 84.8 per cent in 1947 to 71.1 per cent in 1980 while those of the M and S sectors increased from 3.1 per cent and 10.9 per cent in 1947 to 10 per cent and 16.1 per cent in 1980, respectively. In the M sector, manufacturing contributed the highest employment absorption figure.

Table 9 — Gross Domestic Product at 1972 Prices, by Sector and Industry, 1950, 1960, 1970, 1980

Major industry group	1950		1960		1970		1980		Growth rate		
	Million	Per cent	Million	Per cent	Million	Per cent	Million	Per cent	1950-1960	1960-1970	1970-1980
All sectors	41,010.2	100.0	70,139	100.0	150,092	100.0	294,376	100.0	5.24	7.26	6.49
1 A Sector	18,481.0	45.1	28,227	40.3	48,332	32.2	73,924	25.1	4.17	5.25	4.19
2 M Sector	8,974.5	21.9	17,629	24.6	45,413	30.3	107,795	36.6	6.51	8.81	8.14
Mining	556.7	1.4	860	1.2	2,555	1.7	4,896	1.7	4.28	9.93	6.28
Manufacturing	5,576.2	13.6	8,389	12.0	23,320	15.5	61,381	20.9	4.03	9.42	6.30
Construction	1,064.3	2.7	3,343	4.8	8,705	5.8	16,709	5.7	10.34	8.90	6.30
Utilities	48.3	.1	210	.3	1,638	1.1	5,813	2.0	12.52	15.45	11.21
Transport	1,729.0	4.2	4,827	6.9	9,195	6.1	18,996	6.5	9.45	6.23	6.95
3 S Sector	13,554.8	33.1	24,283	34.6	56,347	37.5	112,657	38.3	5.67	7.95	6.29
Commerce	5,374.4	13.1	11,123	5.9	26,524	17.7	47,049	16.0	9.30	8.18	5.58
Services*	8,180.4	20.0	13,160	18.8	29,823	19.9	65,608	22.3	4.67	7.75	7.50

Source: National Economic and Social Development Board, Prime Minister's Office.

*includes dwelling

(in thousands)

Major industry group	Employed population							
	1947	Per cent	1960	Per cent	1970	Per cent	1980	Per cent
Men and Women								
All sectors:								
11 + years	n.a.		13,748.7	100.0	16,652.2	100.0	23,281.4	100.0
15 + years	8,992.1	100.0	12,681.3	100.0	15,013.2	100.0	21,841.1	100.0
1 A Sector:								
11 + years	n.a.		11,332.2	82.4	13,201.9	79.3	16,820.6	72.2
15 + years	7,623.2	84.8	10,741.9	81.6	11,601.9	77.8	15,530.6	71.1
2 M Sector:								
11 + years	n.a.		749.3	5.4	1,244.4	7.5	2,231.3	9.6
15 + years	276.9	3.1	731.1	5.8	1,189.8	7.9	2,175.6	10.0
Mining								
11 + years	n.a.		29.5	0.2	86.6	.5	94.2	0.4
15 + years	14.8	0.1	28.5	0.2	81.4	.5	90.5	0.4
Manufacturing								
11 + years	n.a.		470.1	3.4	682.6	4.1	1,308.5	5.6
15 + years	195.9	2.2	454.8	3.6	644.6	4.3	1,267.4	5.8
Construction								
11 + years	n.a.		68.6	0.5	181.5	1.1	352.5	1.5
15 + years	8.1	0.1	68.3	0.5	171.1	1.1	344.5	1.6
Utilities								
11 + years	n.a.		15.5	0.1	25.3	.2	60.0	.26
15 + years	2.2	—	15.4	0.1	25.2	.2	59.9	.27
Transport								
11 + years	n.a.		165.1	1.2	268.4	1.6	416.7	1.7
15 + years	65.9	0.7	164.1	1.2	267.5	1.8	413.3	1.8
3 S Sector								
11 + years	n.a.		1,433.6	10.4	2,060.0	12.4	3,584.9	15.4
15 + years	980.7	10.9	1,388.0	10.9	1,997.8	13.3	3,520.5	16.1
Commerce								
11 + years	n.a.		779.3	5.7	875.8	5.3	1,595.4	6.9
15 + years	207.0	7.9	744.4	5.9	845.2	5.6	1,555.7	7.1
Services								
11 + years	n.a.		654.2	4.8	1,184.2	7.1	1,989.5	8.5
15 + years	273.7	3.0	643.6	5.1	1,152.6	7.7	1,964.8	9.0

Table 10 (Continued).

Major industry group	Average Annual Absolute Change						Growth Rate								
	1947- Per		1960- Per		1947- Per		1947- 1970-		1970- 1980		1947- 1980				
	1960 cent	1970 cent	1970 cent	1980 cent	1970 cent	1980 cent	1970	1980	1970	1980	1970	1980			
Men and women															
All sectors	n.a.	100.0	290.4	100.0	662.9	100.0	n.a.	100.0	n.a.	100.0	n.a.	1.91	3.32	n.a.	n.a.
	283.8	100.0	233.2	100.0	682.8	100.0	261.8	100.0	389.4	100.0	2.61	1.68	3.71	2.18	2.53
1 A Sector:	n.a.	187.0	64.4	361.9	54.6	n.a.		n.a.			n.a.	1.52	2.41	n.a.	
	209.1	73.7	134.0	57.5	384.9	56.4	176.5	67.4	239.6	61.5	2.37	1.22	2.82	1.83	2.07
2 M Sector:	n.a.	49.5	17.1	98.7	14.9	n.a.		n.a.			n.a.	4.97	5.68	n.a.	n.a.
	34.9	12.3	45.9	19.7	98.6	14.4	39.7	15.2	57.5	14.8	7.75	4.78	5.85	5.41	4.69
Mining:	n.a.	5.7	2.0	.8	.1	n.a.		n.a.			n.a.	9.84	.8	n.a.	n.a.
	1.8	.6	5.3	2.3	.9	.1	3.3	1.3	2.6		714.67	9.63	1.06	7.73	5.45
Manufacturing:	n.a.	21.3	7.3	62.6	9.4	n.a.		n.a.			n.a.	3.69	6.29	n.a.	n.a.
	19.9	7.0	19.0	8.1	62.3	9.1	19.5	7.5	32.5	8.3	6.69	3.45	6.51	4.64	4.44
Construction:	n.a.	11.3	3.9	17.1	2.6	n.a.		n.a.			n.a.	9.03	6.40	n.a.	n.a.
	4.6	1.6	10.3	4.4	17.3	2.5	7.1	2.7	10.2		2.617.76	8.59	6.73	7.91	5.78
Utilities:	n.a.	1.0	.3	3.5	.5	n.a.		n.a.			n.a.	4.80	8.14	n.a.	n.a.
	1.0	.4	1.0	.4	3.5	.5	1.0	.4	1.7		416.25	4.83	8.16	7.30	5.63
Transport:	n.a.	10.3	3.6	14.8	2.2	n.a.		n.a.			n.a.	4.77	4.32	n.a.	n.a.
	7.6	2.7	10.3	4.4	14.6	2.1	8.8	3.3	10.5	2.7	7.28	4.79	4.28	5.25	4.79
3 S Sector:	n.a.	62.6	21.6	152.5	23.0	n.a.		n.a.			n.a.	3.59	5.40	n.a.	n.a.
	31.3	11.0	61.0	26.2	152.3	22.3	44.2	16.9	77.0	6.6	2.71	3.60	5.52	2.30	3.42
Commerce:	n.a.	9.7	3.3	72.0	10.9	n.a.		n.a.			n.a.	1.17	5.82	n.a.	n.a.
	2.9	1.0	10.0	4.3	71.1	10.4	6.0	2.3	25.7	6.6	0.40	1.27	5.92	7.74	2.27
Services:	n.a.	53.0	18.6	80.5	12.1	n.a.		n.a.			n.a.	5.77	5.07	n.a.	n.a.
	28.5	10.2	51.0	21.8	81.2	11.9	38.2	14.6	51.2	13.2	6.80	5.67	5.21	5.36	4.58
Unknown:	n.a.	-8.8	3.0	49.9	7.5	n.a.		n.a.			n.a.	-4.63	12.62	n.a.	n.a.
	8.4	3.0	-8.3	-3.6	50.0	7.3	3.1	.4	15.9	4.1	--	-4.63	12.86	.92	4.25

Sources: 1) 1947, 1960 Census data from Spoelstra and Isarangkun. "Labor absorption in Thailand, PEJ, Vol. XV, 1976, Table 6.
2) 1970, 1980 Census data from the National Statistical Office, Office of the Prime Minister, Thailand.

On a yearly average, the absolute increase in employment was from 283,000 during 1947-60 to 682,000 during 1970-80. During 1947-60, 73.7 per cent of the increase in employment was absorbed by the A sector while the remaining 12.3 per cent was absorbed by the M sector and 11 per cent by the S sector. However, during 1970-80, the absorptive capacity changed to 56.4 per cent, 14.4 per cent and 22.3 per cent for the A, M and S sectors, respectively. Although the absorptive capacity of the A sector declined as compared to the M and S sectors, the A sector still plays a significant role in labor absorption in the 1980s.

4.1. Labor Absorption in the A Sector

The average annual growth rate of the A sector was 4.17 per cent, 5.25 per cent and 4.19 per cent during 1950-60, 1960-70 and 1970-80, respectively, resulting in an increase of its output in real terms from 18.4 million in 1950 to 73.9 million in 1980. However, its contribution to GDP decreased from 45.1 per cent in 1950 to 25.1 per cent in 1980. This was due mainly to the relatively high growth in the M and S sectors. The overall performance of the A sector in the past decades was considerably good, especially in the 1960s. This was due mainly to the great world demand for agricultural products in the 1950s and the 1960s. In response to the increasing world demand, infrastructure like irrigation dams and roads were built, and agriculture extension services were expanded in the 1960s, resulting in an increase in rice and other highland crops like maize, kenaf, tapioca, which in turn resulted in a great degree of diversification of agricultural products. With the exception of the central and lower parts of the northern region, the increase in production was mainly due to the expansion of arable agricultural lands.

After three decades of growth, employment absorption by the A sector increased from 7.6 million in 1947 to 15.5 million in 1980, representing an average increase of 2.07 per cent annually. If the growth figures were broken down into three separate periods, 1960-70 had the lowest rate of growth of 1.22 per cent against 2.37 per cent during 1947-60, and 2.82 per cent, during 1970-80. Table 11 shows that paddy employed about 80 per cent of total employment in the A sector. But cassava had the highest rate of growth in employment during 1970-80 followed by rubber and maize. Fruits had the lowest employment growth rate during the same period. Although cassava, rubber and maize combined employed about 15 per cent of total employment in the A sector, the potential of these industries to absorb a bigger share of labor in the future is great.

4.2. Labor Absorption in the M Sector

The average rate of growth in output of the M sector was 6.51 per cent during 1950-60, 8.81 per cent during 1960-70 and 8.14 per cent during 1970-80 which exceeded the average growth rate of all sectors of its respective time period. In the M sector, manufacturing contributed 20.9 per cent to GDP in 1980 against 36.6 per cent which was the entire M sector's contribution to GDP. Manufacturing enjoyed an average growth rate of 9 per cent annually in the past two decades. This was the result of the government's economic development policy in the 1960s which emphasized infrastructure building and the promotion of private investment. In addition, the demand for domestic manufacturing products increased due to import restriction and increase in purchasing power caused by rising world demand for Thai agricultural products.

Although the M sector has the highest rate of growth in employment among the three main sectors in the past three decades, the share in total employment was only 10 per cent in 1980. Out of the 10 per cent, 5.8 per cent was contributed by manufacturing industry against 1.8 per cent by transportation, 1.6 per cent by construction, 0.4 per cent by mining and 0.27 per cent by utilities. The average annual employment rate of growth of mining, construction and utilities ranged from 5.78 per cent to 5.45 per cent while manufacturing and transportation ranged from 4.79 per cent to 4.44 per cent during 1947-80. Of the average of total employment increase each year during the last three decades, the M sector absorbed 14.8 per cent which can be broken down as follows, 8.3 per cent in manufacturing, 2.7 in transportation, 2.6 in construction, 0.7 in mining and 0.4 in utilities.

Table 11 provides a more detailed information of employment generation by the M sector by showing employment data by industries. During 1970-80, under mining industries, employment in tin mining increased by 10 per cent yearly as against a negative growth in other industries. Under the manufacturing sector, four industries increased employment of more than 10 per cent a year during 1970-80. These four industries were: 1) canning and preserving of fruits, vegetables and fish, 2) manufacture of plastic, nylon and plastic, nylon products, 3) manufacture and repair of machinery, and 4) manufacture and repair of electrical and electronic machinery, appliances and supplies. The rest of the industries under the manufacturing sector increased employment of more than 5 per cent a year with the exception of seven industries which increased less than 5 per

cent. Those seven industries were 1) rice mills, grain mills and manufacture of rice and grain products, 2) manufacture of flour products 3) sugar factories and manufacture of sugar confectionery, cocoa and chocolate products, 4) manufacture of tobacco products and snuff 5) ice factories, 6) manufacture of food products, n.e.c., and 7) saw mills, planning mills and plywood factories. Employment generation under the utilities sector was high, except in the sanitary service industry. On the other hand, most of the industries under the transportation sector performed poorly, except storage and warehouse radio and television broadcasting; post, telegrams and telephone aircraft transport and related services.

4.3. Labor Absorption in the S Sector

The output of the S sector grew at an average yearly rate of 5.67 per cent, 7.95 per cent and 6.29 per cent during 1950-60, 1960-70 and 1970-80, respectively. The 1960s was the best decade for this sector and all the other sectors of the economy. The contribution to GDP increased from 13.5 billion baht in 1950 to 112.4 billion baht in 1980, representing 33.1 per cent and 38.3 per cent of GDP in 1950 and 1980, respectively. The commerce sector's share was 16.0 per cent while that of services was 22.3 per cent of the total GDP in 1980. This, again, confirmed the favorable world economic condition in the 1950s and the 1960s and the government policy to promote private enterprises in the 1960s. Conservative monetary policy in the 1960s also contributed to a subsequent sound and stable growth of the financial institutions of the country.

The employment growth rate of the S sector was higher than the overall growth rate in the past decades. As a result, employment increased from 980,700 in 1947 to 3,520,500 in 1980, representing an increase in the share to total employment from 10.9 per cent to 16.1 per cent, respectively. In 1980, the commerce and services sectors contributed 7.1 per cent and 9 per cent, respectively. The average annual increase of employment of the S sector was 31,300 during 1940-60 and 152,300 during 1970-80. Out of the total yearly increase in employment during 1970-80, 22.3 per cent was absorbed by the S sector, in which the commerce and services industries' shares were 10.4 per cent and 11.9 per cent, respectively.

5. Labor Absorption Rate of Income

One way to measure the absorptive capacity of a product sector is to compute the labor absorption rate of income (emplo

Table 11 — Employed Population 11 Years of Age and Over, by Major Industry Group, 1970 and 1980
(in thousands)

Major industry group	1970	1980	Average annual absolute change	Average annual growth rate
Total	16,651	23,189	658.8	0.032
I. Agriculture, forestry, hunting and fishing	13,201	16,642	344.1	0.023
1. Paddy	11,193	12,953	176.0	0.015
2. Maize	383	680	29.7	0.056
3. Rubber plantation and tapping rubber latex	368	677	30.9	0.059
4. Cassava	110	506	39.6	0.129
5. Coconut	91	130	3.9	0.035
6. Tobacco, cotton, tea, coffee and kenaf	304	414	11.0	0.031
7. Vegetables	207	284	7.7	0.031
8. Fruits	283	288	.5	0.002
9. Livestock and poultry	93	99	.6	0.006
10. Production of honey, silkworm egg and sticklac	1.2	3	.18	0.089
11. Forestry and logging	33	40	.7	0.019
12. Fishing	123	199	7.6	0.047

II. Mining and quarrying	86	92	.6	0.007
1. Tin mining	11	33	2.2	0.100
2. Other metal mining, gem stone quarrying and oil well operation	32	18	-1.4	-0.056
3. Non-metallic mining, sand pits and quarrying	40	30	-1.0	-0.029
III. Manufacturing	682	1,319	63.7	0.064
1. Manufacture of food, beverages and tobacco	144	245	10.1	0.052
-- slaughtering, preparing and preserving meat and meat products	5	10	.5	0.067
-- manufacture of milk, butter, ice cream and frozen sweets	2.1	4.41	.23	0.071
-- canning and preserving of fruits, vegetables and fish	10	47	3.7	0.130
-- rice mills, grain mills and manufacture of rice and grain products	40	55	1.5	0.032
-- manufacture of flour products	21	30	.9	0.035
-- sugar factories and manufacture of sugar confectionery, cocoa and chocolate products	23	27	.4	0.016
-- beverage industries	10	22	1.2	0.075
-- manufacture of tobacco products and snuff	19	24	.5	0.023
-- ice factories	5.1	7.4	.23	0.035
-- manufacture of foods products, n.e.c.	3	4	.1	0.029

Major industry group	1970	1980	Average annual absolute change	Average annual growth rate
2. Textile, wearing apparel, made-up textile goods and leather industries	204	396	19.2	0.064
— spinning, weaving, dyeing and finishing textiles	58	126	6.8	0.074
— manufacture of wearing apparel and other textile goods	131	238	10.7	0.058
— cordage, rope, twine and allied industries	3	7	.4	0.080
— manufacture of leather and leather products	10	22	1.2	0.075
3. Manufacture of wood and wood products, including furniture	89	141	5.2	0.045
— sawmills, planning mills and plywood factories	35	42	.7	0.018
— manufacture of wood and cork products except furniture	38	64	2.6	0.051
— manufacture of furniture and fixtures	14	33	1.9	0.081
4. Manufacture of paper and paper products, printing and allied industries	23	46	2.3	0.067
— manufacture of paper and paper products	7	19	1.2	0.092
— printing, publishing and allied industries	15	27	1.2	0.057
5. Manufacture of rubber and rubber products, chemical, petroleum and plastic products	26	66	4.0	0.087
— manufacture of rubber and rubber products	8	18	1.0	0.077

THAILAND

— manufacture of basic industrial chemicals, including fertilizers	1.591	3	.14	0.061
— manufacture of chemical products, n.e.c.	10	26	1.6	0.089
— manufacture of vegetable and animal oils and fats	1.147	1.983	.08	0.053
— manufacture of plastic, nylon and plastic, nylon products	3	18	1.5	0.143
6. Manufacture of non-metallic mineral products, except petroleum and coal	43	80	3.7	0.060
— manufacture of cement, slaked lime and other non-metallic products	9	23	1.4	0.088
— manufacture of structural clay products	19	32	1.3	0.051
— manufacture of pottery, china and earthenware	8	15	.7	0.061
— manufacture of glass and glass products	3	8	.5	0.091
7. Manufacture of metal and metal products, machinery and equipment	123	290	167	0.081
— iron and basic steel industries	26	56	30	0.073
— manufacture of metal products, except machinery and transport equipment	18	44	26	0.084
— manufacture and repair of machinery	1.1	3.7	.26	0.109
— manufacture and repair of electrical and electronic machinery, appliances and supplies	13	48	3.5	0.115
— manufacture and repair of motor vehicles and bicycles	54	121	6.7	0.077

PICHAI CHARNSUPHARINDR

Major industry group	1970	1980	Average annual absolute change	Average annual growth rate
— shipbuilding, ship and aircraft repairing	3.7	7.2	.35	0.065
— manufacture and repair of watches and clocks and technical equipment	2.2	5.8	.36	0.092
8. Other manufacturing industries, n.e.c.	23	47	2.4	0.069
— manufacture of jewelry and related articles	13	28	1.5	0.073
— manufacture of other miscellaneous products	8	14	.6	0.055
IV. Construction, repair and demolition	180	349	16.9	0.064
V. Utilities	25	61	3.6	0.084
1. Electricity	17	46	2.9	0.092
2. Water supply	4	12	.8	0.100
3. Sanitary services	2.1	1.7	-.04	0.020
VI. Commerce	875	1,606	73.1	0.059
1. Wholesale trade	14	55	4.1	0.119
— agriculture products	3	21	1.8	0.150
— food and beverages	7	13	.6	0.060
— others	4	19	1.5	0.130
— wholesale and retail trade	2.2	3.5	.13	0.045
2. Retail trade	832	1,545	71.3	0.060

- food, including hawkers, peddlers of food and beverages	473	660	18.7	0.033
- textiles and apparel	35	73	3.8	0.070
- furniture, fixtures and household goods	12	38	2.6	0.104
- gasoline	12	18	.6	0.040
- sundry goods	117	493	37.6	0.123
- goods, n.e.c.	176	258	8.2	0.038
VII. Banks and other financial institutions, insurance and real estate	24	109	8.5	0.128
1. Banks and other financial institutions	19	72	5.3	0.117
2. Insurance and real estate	4	35	3.1	0.159
VIII. Transport, storage and communication	267	422	15.5	0.045
1. Railway transport and related services	29	28	-1	0.004
2. Passenger car transport	145	201	5.6	0.032
3. Freight transport by road, n.e.c.	35	58	2.3	0.050
4. Water and ocean transport	28	30	.2	0.007
5. Aircraft transport and related services	6	12	.6	0.067
6. Services incidental to transport	3	18	.3	0.029
7. Storage and warehousing	2	6	.4	0.100
8. Post, telegraph and telephone	12	25	1.3	0.070
9. Radio and television broadcasting	1.2	3.3	.21	0.094
IX. Services	1,183	1,918	73.5	0.047
1. Government services	407	723	31.6	0.056
2. Municipal services	14	27	1.3	0.063
3. Educational services	206	532	32.6	0.088
4. Services in hospital	27	86	6.0	0.113

Major industry group	1970	1980	Average annual absolute change	Average annual growth rate
6. Legal services and business services	17	18	.1	0.006
7. Motion picture production, distribution and projection	0.64	5	.43	0.013
8. Theaters and related services	17	18	.1	0.006
9. Amusement and recreation services	4	8	.4	0.067
10. Domestic services	88	118	3.0	0.029
11. Restaurants, other eating and drinking places	163	183	2.0	0.012
12. Hotel and other lodging places	15	33	1.8	0.075
13. Laundries and laundry services, cleaning and dyeing	16	23	.7	0.036
14. Barbers and beauty salons	45	66	2.1	0.038
15. Personal services, n.e.c.	129	18	-11.1	-0.151
16. Portrait, photography and commercial photographic studios	3	7	.4	0.080
X. Activities not adequately described or unknown	145	614	46.9	0.124

Source: 1970 and 1980 population census, National Statistical Office, Office of the Prime Minister, Thailand.

Note: Industry which employed less than 1,000 workers is not presented in the Table.

ment - income elasticity) of that particular sector. The labor absorption rate of income is defined as the percentage change in employment with respect to the percentage change in income (output). If α stands for labor absorption rate of income, G_n for employment growth rate and G_y for income growth rate, then $\alpha = \frac{G_n}{G_y} \cdot \alpha$, therefore, refers to the percentage change in employment due to one percentage change in income. The higher the α , the greater the absorptive capacity of that sector.

Table 12 shows that the labor absorption rate of income of all sectors dropped drastically during 1960-70 to 0.263 as against 0.498 during 1950-60 and 0.511 during 1970-80. This was mainly due to the low labor absorption rate of income of the A sector, which was only 0.289 compared to 0.568 during 1950-60 and 0.575 during 1970-80. This might be the result of the increase in agricultural output via increase in yield per rai in the 1960s relative to the 1950s and the 1970s. With the completion of big irrigation projects in the 1960s, double cropping was made possible in some regions, particularly in the central and lower northern parts of Thailand. Consequently, labor utilization became more intensive as compared to the 1950s and the 1970s.

The absorptive capacity of the M sector was high in the 1950s but declined in the 1960s and the 1970s. This might suggest that industrial promotion in the 1960s and the 1970s was biased toward capital intensive industries than labor intensive industries. Among the industries which were under the M sector, construction, being a labor intensive industry, had the highest labor absorption rate of income. Meanwhile, the absorptive capacity of the S sector increased drastically in the 1970s as compared to the 1950s and the 1960s. This was due mainly to the drastic increase of the labor absorption rate of income of commerce industries.

To compute the labor absorption rate of income by industry, the employment figures by industry presented in Table 11 need to be adjusted in order to fit into the output by industry figures. Table 13 shows that among the industries under the A sector, maize, rubber plantation and tapping rubber latex, cassava, coconut and fishing have great potential in labor absorption. Their labor absorption rate of income was greater than 1. Industries which had the labor absorption rate of income of greater than 1 in the M sector were: 1) tin, 2) manufacture of food, beverages and tobacco, 3) rubber and rubber products, chemical and petroleum, 4) construction, 5) electricity, and 6) water supply. The industries within the S sector which had a

Table 12 — Average Annual Growth Rates of Employment, Gross Domestic Product and Labour Absorption Rate of Income, Whole Kingdom, 1950-1960, 1960-1970, 1970-1980

Economic sector	Employment growth rate G_n			GDP growth rate G_y			Labour absorption rate of income G_n/G_y		
	1947*-1960	1960-1970	1970-1980	1950-1960	1960-1970	1970-1980	1950-1960	1960-1970	1970-1980
All sectors	2.61	1.91	3.32	5.24	7.26	6.49	.498	.263	.511
1 A Sector	2.37	1.52	2.41	4.17	5.25	4.19	.568	.289	.575
2 M Sector	7.75	4.97	5.68	6.51	8.81	8.14	1.190	.564	.697
Mining	14.67	4.84	0.8	4.28	9.93	6.28	3.427	9.90	.127
Manufacturing	6.69	3.69	6.29	4.03	9.42	8.99	1.660	.391	.639
Construction	17.75	9.03	6.40	10.34	8.90	6.30	1.717	1.015	1.016
Utilities	16.25	4.80	8.14	12.52	15.45	11.21	1.298	.310	.726
Transport	7.28	4.77	4.32	9.45	6.23	6.95	.770	.765	.621
3 M Sector	2.71	3.59	5.40	5.67	7.95	6.29	.478	.451	.858
Commerce	0.40	1.17	5.82	9.20	8.18	5.58	.043	.143	1.043
Services	6.80	5.77	5.07	4.67	7.75	7.50	1.456	.744	.676

Source: Computed from Tables 8 and 9.
*Employed persons aged 14 years old and over.

THAILAND

Table 13 — Average Annual Growth Rate of Employment, Output
and Labour Absorption Rate of Income, 1970-1980
(in per cent)

Industry	G _n	G _y	$\frac{G_n}{G_y}$
I. Agriculture			
1) Paddy	1.46	5.92	.247
2) Maize	5.59	4.32	1.294
3) Rubber plantation and tapping rubber latex	5.91	5.83	1.014
4) Cassava	12.86	21.04	1.068
5) Coconut	3.53	2.32	1.522
6) Vegetables	3.14	4.38	0.717
7) Fruits	0.18	6.35	0.028
8) Other crops	3.06	6.32	0.484
9) Livestock and livestock products	0.82	6.32	0.130
10) Fishing	4.72	2.29	2.061
11) Forest and forest products	1.22	4.04	0.475
II. Mining			
1) Tin	10.0	8.85	1.130
2) Other metal mining and non-metallic mining	-2.15	5.15	-0.417
III. Manufacturing			
1) Manufacture of food, beverages and tobacco	5.19	4.51	1.151
2) Textile wearing apparel, made-up textile goods and leather industries	6.40	11.10	0.577
3) Wood and cork, furnitures and fixtures	4.52	6.49	0.696
4) Paper and paper products, printing and allied industries	6.67	9.24	0.722
5) Rubber and rubber products, chemical and petroleum	8.70	7.89	1.103
6) Metal and metal products, machinery and equipment	8.09	10.76	0.752
7) Non-metallic mineral products and other manufacturing industries	6.32	8.22	0.769
IV. Construction	6.39	6.10	1.048
V. Utilities			
1) Electricity	9.21	3.32	2.774
2) Water supply	10.0	4.62	2.169
VI. Transport	4.50	18.27	.246

Table 13. (Continued)

Industry	G_n	G_y	$\frac{G_n}{G_y}$
VII. Commerce			
1) Wholesale and retail trade	6.16	12.56	.490
2) Bank and financial institution, insurance and real estate	12.78	9.35	1.367
VIII. Services			
1) Public administration and defense	5.62	6.06	.932
2) Education	8.83	8.34	1.059
3) Medical and health	9.02	7.46	.953
4) Recreation and entertainment	3.85	0.69	5.580
5) Domestic	2.91	3.33	.874
6) Hotel and restaurant	1.93	5.73	.337
7) Other services	-4.56	2.16	-2.111

Sources: 1) Population census, National Statistical Office, Office of the Prime Minister, Thailand; and 2) National income of Thailand 1970 and 1980, the National Economic and Social Development Board, Office of the Prime Minister, Thailand.

Note: GDP deflator: 1970 = 92.52
1972 = 100
1980 = 233.9

great potential in labor absorption were 1) bank and financial institutions, insurance and estate, 2) education, and 3) recreation and entertainment.

Overall, with the share in employment of only 10 per cent in the M sector and 16 per cent in the S sector, the A sector could remain the major source of employment absorption in the 1980s. With the rapid increase in labor force in the 1980s, and the depletion of arable agriculture land, it was expected that underemployment in the rural area would increase which would encourage more rural-urban migration which, in turn, would create more open unemployment in the city.

6. Employment by Region

As discussed briefly earlier, regional population and employment distribution could be one of the major problems in the 1980s. To have a deeper understanding of the problem, this section will discuss such aspects as the population, employment, labor utilization, output and labor absorption between the five regions, namely Bangkok Metropolis, central, northern, northeastern and southern regions.

6.1 *Population and Employment*

Tables 14 to 17 present the population and employment figures of four regions. The Bangkok Metropolis had the highest population growth during the past two decades, followed by the north-eastern, central, south and northern regions. The population growth rate of the Bangkok Metropolis and the northeastern area exceeded the total population growth rate during 1960-80; on the other hand, that of the northern part was the lowest mainly due to low fertility rate resulting from an early introduction of family planning to this region by a private non-profit organization in the early 1960s. On the average, the northeastern region had the highest fertility rate followed by the southern region. During 1974-75, the total fertility rates of the northeast and the south were almost 1.7 times that of the north or Bangkok Metropolis (Pasith-rathsint). This may suggest that the high population growth of the Bangkok Metropolis and the central region was mainly due to migration.

The labor force participation by region seemed to show that the higher the per capita income of the region, the lower its labor force participation rate. For instance the Bangkok Metropolis had the highest per capita income, and the lowest labor force participation rate, while the northeastern region had the lowest per capita income and the highest labor force participation rate. In 1980, the labor force participation rate of Bangkok Metropolis and the northeast was 58.44 per cent and 71.60 per cent, respectively. In all regions, the majority of the working age population who were not in the labor force were classified as students.

If we compare the employment growth rate during the two periods, namely 1960-70 and 1970-80, all the regions showed an increase except the northeastern region. The employment growth rate of the Bangkok Metropolis increased from 3.42 per cent during 1960-70 to 5.30 per cent during 1970-80, while in the northeastern region the rate dropped from 2.26 per cent to 1.70 per cent, respectively. All the other regions had a moderate employment growth rate of less than 3 per cent a year.

Since the center of industrialization is located in the Bangkok Metropolis and surrounding provinces in the central region, open unemployment rates were high in these two regions. In 1980, the unemployment rates of the Bangkok Metropolis and the central region were 7.37 per cent and 3.43 per cent, respectively. Although the un-

Table 14 — Population Aged 11 Years and Over by Labour Force Status, Central Region, 1960, 1970 and 1980

	Working-Age Population				Average Annual Absolute Change				Average Annual Growth Rate	
	1960		1980		1960-1970		1970-1980		1960-1970	1970-1980
	(thou- sand)	Per- cent	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	Per cent	Per cent
Men and women	6,134	100.0	9,726	100.0	140.0	100.0	219.2	100.0	2.05	2.54
I. 1) Population 10 years and under	2,057	33.53	2,552	33.87	49.5	25.86	35.36	- 3.7	-1.6	-0.15
2) Population 11 years and over	4,077	66.47	4,982	66.13	90.5	74.14	222.9	101.6	2.00	3.66
II. In labour force	3,241	79.69	3,650	74.41	40.9	69.86	48.81	127.1	59.42	2.97
1) Employed	3,224	99.48	3,591	98.38	36.7	96.53	89.73	115.9	91.19	2.78
2) Unemployed	16	0.49	61	1.67	4.5	3.43	11.00	10.8	8.5	11.69
III. Not in labour force	826	20.31	1,256	25.61	43.0	30.12	51.31	86.6	40.4	4.13
1) Student	n.a.	n.a.	441	35.11	n.a.	44.82	n.a.	51.0	58.8	n.a.
2) Work around house	n.a.	n.a.	465	37.02	n.a.	29.41	n.a.	15.9	18.36	n.a.
3) Others	n.a.	n.a.	350	27.87	n.a.	25.68	n.a.	19.5	22.52	n.a.
Unknown	10	-	77	-	6.7	-	9.0	-	-	-

Source: Population Census 1960, 1970 and 1980, National Statistical Office, Office of the Prime Minister, Thailand.

Table 15 -- Population Aged 11 Years and Over by Labour Force Status, Northern Region, 1960, 1970 and 1980

	Working-Age Population				Average Annual Absolute Change				Average Annual Growth Rate			
	1970		1980		1960-1970		1970-1980		1960-1970	1970-1980		
	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	1970	1980		
Men and women	5,723	100.0	7,488	100.0	9,074	100.0	176.5	100.0	158.6	100.0	1.71	1.92
I. 1) Population 10 years and under	2,000	34.95	2,530	33.79	2,245	24.74	53.0	30.03	- 28.5		2.34	-1.19
2) Population 11 years and over	3,723	65.05	4,958	66.21	6,829	75.26	123.5	69.97	187.1	117.97	2.85	3.17
II. In labour force	3,011	81.01	3,741	76.47	4,788	71.39	73.0	62.13	104.7	57.69	2.16	2.46
1) Employed	2,997	99.54	3,693	98.72	4,662	97.37	69.6	95.34	96.9	92.55	2.08	2.32
2) Unemployed	13	0.43	44	1.18	124	2.59	3.1	4.25	8.0	7.64	10.88	9.52
III. Not in labour force	705	18.97	1,150	23.51	1,918	28.60	44.5	37.87	76.8	42.31	4.80	5.01
1) Student	n.a.	n.a.	399	34.70	762	39.73	n.a.	n.a.	36.3	47.25	n.a.	6.25
2) Work around house	n.a.	n.a.	396	34.43	658	34.31	n.a.	n.a.	26.2	34.11	n.a.	4.97
3) Others	n.a.	n.a.	351	30.52	495	25.81	n.a.	n.a.	14.4	18.75	n.a.	3.40
Unknown	6	-	66	-	122	-	6.0	-	5.6	-	-	-

Source: Population Census, 1960, 1970 and 1980, National Statistical Office, Office of the Prime Minister, Thailand.

Table 16 — Population Aged 11 years and Over by Labour Force Status, Northeastern Region, 1960, 1970 and 1980

	Working-Age Population				Average Annual Absolute Change				Average Annual Growth Rate			
	1960	1970	1980	1960-1970	1970-1980	1960-1970	1970-1980	1960-1970	1970-1980	1960-1970	1970-1980	
	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	
Men and women	8,991	100.0	12,025	100.0	15,698	100.0	303.4	100.0	367.3	100.0	2.89	2.65
I. 1) Population 10 years and under	3,125	34.76	4,492	37.36	5,056	32.21	136.7	45.06	56.4	15.36	3.59	1.18
2) Population 11 years and over	5,866	65.24	7,533	62.64	10,642	67.79	166.7	54.94	310.9	84.67	2.49	3.42
II. In labour force	5,013	85.65	6,303	83.67	7,471	71.60	129.0	82.85	116.8	38.71	2.28	1.70
1) Employed	4,983	49.40	6,254	99.22	7,304	97.76	127.1	98.53	105.0	89.90	2.26	1.55
2) Unemployed	30	0.60	46	0.73	165	2.21	1.6	1.32	11.9	10.19	4.21	11.28
III. Not in labour force	839	14.33	1,114	14.79	2,964	28.40	27.5	17.66	185.0	61.32	2.82	9.07
1) Student	n.a.	n.a.	409	36.71	1,288	43.45	n.a.	n.a.	87.9	47.51	n.a.	10.36
2) Work around house	n.a.	n.a.	308	27.65	1,039	35.05	n.a.	n.a.	73.1	39.51	n.a.	10.85
3) Others	n.a.	n.a.	392	35.19	633	21.36	n.a.	n.a.	24.1	13.03	n.a.	4.70
Unknown	5	—	115	—	207	—	11	—	9.2	—	—	—

Source: Population Census 1960, 1970 and 1980, National Statistical Office, Office of the Prime Minister, Thailand.

THAILAND

Table 17 — Population Aged 11 Years and Over by Labour Force Status, Southern Region, 1960, 1970 and 1980

	Working-Age Population						Average Annual Absolute Change			Average Annual Growth Rate		
	1960		1970		1980		1960-1970		1970-1980		1960-	1970-
	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	(thou- sand)	Per cent	1970	1980
Men and women	3,271	100.0	4,271	100.0	5,628	100.0	100.0	100.0	135.7	100.0	1.68	2.74
I. 1) Population 10 years and under	1,067	32.62	1,496	35.03	1,689	53.77	42.9	42.9	19.3	14.22	3.35	1.21
2) Population 11 years and over	2,204	67.38	2,775	64.97	3,939	69.99	57.1	57.1	116.4	85.78	2.29	3.47
II. In labour force	1,746	79.40	1,969	72.71	2,506	65.16	22.3	43.81	53.7	47.19	1.20	2.40
1) Employed	1,741	99.71	1,945	98.78	2,423	96.69	20.4	91.48	47.8	89.01	1.11	2.19
2) Unemployed	4	0.23	21	1.07	82	3.27	1.7	7.62	6.1	11.36	13.6	11.84
III. Not in labour force	453	20.60	737	27.22	1,339	34.82	28.4	55.80	60.2	52.90	4.77	5.80
1) Student	n.a.	n.a.	296	40.16	635	47.42	n.a.	n.a.	33.9	56.31	n.a.	7.28
2) Work around house	n.a.	n.a.	281	38.13	460	34.35	n.a.	n.a.	17.9	29.73	n.a.	4.83
3) Others	n.a.	n.a.	158	21.44	242	18.07	n.a.	n.a.	8.4	13.95	n.a.	4.20
Unknown	5	—	67	—	93	—	6.2	—	2.6	—	—	—

Source: Population Census 1960, 1970 and 1980, National Statistical Office, Office of the Prime Minister, Thailand.

employment rate in all the other regions increased from 1960 to 1980, it was still very low when compared with that of the developed countries.

During the period 1970-80, the absolute yearly increase in employment was 115,900 in the central region, 105,000 in the north-east, 96,900 in the north, 81,600 in the Bangkok Metropolis and 47,800 in the south which was equivalent to 25.9 per cent, 23.5 per cent, 21.6 per cent, 18.3 per cent and 10.7 per cent of the total yearly increase in employment, respectively.

The percentage of adequately utilized labor in all the regions increased from 1977 to 1981 (see Table 18), except in the Bangkok Metropolis where it dropped from 70.77 per cent to 60.22 per cent. In the central, north, northeast and south regions, the figure increased from 75.88 to 79.12 per cent, 65.27 to 84.30 per cent, 50.80 to 83.08 per cent and 72.36 to 83.49 per cent, respectively. Conversely, the percentage of inadequately utilized persons in the Bangkok Metropolis increased while that in the rest of the regions decreased during the same period. However, the Bangkok Metropolis had the highest open unemployment rate of 3.06 per cent in 1981. In sum, the degree of labor utilization in the Bangkok Metropolis was deteriorating while it was improving in the rest of the regions.

6.2 Income and Labor Absorption Rate

The contribution of the Bangkok Metropolis to GDP increased from 28.80 per cent in 1970 to 34.24 per cent in 1980 while that for the rest of the regions decreased during the same period (see Table 19). In 1980, the shares in output of the central, northern, north-eastern and southern regions were 27.71 per cent, 13.04 per cent, 14.68 per cent and 10.32 per cent, respectively. The Bangkok Metropolis and central regions combined contributed more than 60 per cent of the total GDP, resulting in the widening of the regional per capita income. In 1980, the per capita incomes of the five regions were 21,347 baht, 8,344 baht, 4,208 baht, 2,738 baht and 5,372 baht, respectively.

While the Bangkok Metropolis was the biggest contributor to GDP, it had the lowest employment absorption rate. In 1980, it absorbed only 8.64 per cent of the total employment against 21.91 per cent by the central, 22.28 per cent by the north, 35.81 per cent by the northeast and 11.35 per cent by the south. However, the

Table 18 — Persons in Labour Force, by Region, 1977, 1981

	Bangkok Metropolis		Central Region		Northern Region		Northeastern Region		Southern Region	
	1977	1981	1977	1981	1977	1981	1977	1981	1977	1981
Persons in labour force	1,979.8	2,496.0	4,318.7	4,957.1	4,435.21	5,429.5	7,416.7	8,959.7	2,325.3	2,736.3
1) Adequately utilized (Per cent of labour force)	1,401.1	1,503.1	4,277.2	3,921.9	2,894.8	4,577.3	3,767.5	7,443.3	1,682.6	2,284.5
	70.77	60.22	75.88	79.12	65.27	84.30	50.80	83.08	72.36	83.49
2) Inadequately utilized (Per cent of labour force)	533.3	916.4	994.6	976.0	1,518.8	829.6	3,612.6	1,482.9	625.4	431.3
	26.94	36.71	23.03	19.69	34.24	15.28	48.71	16.55	26.90	15.76
3) Unemployed (Per cent of labour force)	54.4	76.5	46.9	59.2	21.6	22.6	36.6	33.4	17.3	20.5
	2.29	3.06	1.09	1.19	0.49	0.42	0.48	0.37	0.74	0.75

Source: Report of the labor force survey (Round 2), 1977 and 1981, National Statistical Office, Office of the Prime Minister, Thailand.

Table 19 — Employed Persons and GDP by Region 1970, 1980
(in thousands)

Region	Employment		GDP	
	1970	1980	1970	1980
Whole Kingdom	16,649	23,279	144,098	292,852
1) Bangkok Metropolis (Per cent of total)	1,136 6.82	2,013 8.64	41,499 28.80	100,270 34.24
2) Central region (Per cent of total)	3,600 21.62	5,100 21.91	40,688 28.23	81,161 27.71
3) Northern region (Per cent of total)	3,701 22.23	5,188 22.28	23,179 16.08	38,191 13.04
4) Northeastern region (Per cent of total)	6,261 37.60	8,336 35.81	22,245 15.44	42,994 14.68
5) Southern region (Per cent of total)	1,951 11.72	2,642 11.35	16,487 11.44	30,236 10.32

Sources: Population Census, 1970 and 1980, the National Statistical Office, Office of the Prime Minister, Thailand; and National Economic and Social Development Board, Office of the Prime Minister, Thailand.

Bangkok Metropolis had the highest yearly GDP and employment growth rate during 1970-80. It accounted for 8.29 per cent in GDP and 5.57 per cent in employment (see Table 20). This seemed to suggest that the Bangkok Metropolis had performed very well in both production and employment absorption in the 1970s. The central region ranked second in both GDP and employment growth rates during that period. The average annual growth rate of GDP during 1970-80 in the other regions was 4.89 per cent for the north, 6.36 per cent for the northeast, and 5.89 per cent for the south. Meanwhile, the average annual growth rate of employment was 3.35 per cent for the north, 2.84 per cent for the northeast, and 3.01 per cent for the south. The industries which had the highest output growth within its respective regions during 1970-80 were manufacturing in the Bangkok Metropolis, utilities in the central region, services in the north, mining in the northeast and services in the south. The industries which had the highest employment within its respective region were commerce in Bangkok, utilities in the central, north and northeast regions, and construction in the south.

Table 20—Average Annual Growth Rates of Employment, Gross Domestic Product by Region, 1970-1980
(in per cent)

Sector	Growth rate of employment (G _N)						Growth rate of GDP (G _Y)					
	Whole Kingdom	Bangkok Metro-polis	Central region	Northern region	North-eastern region	Southern region	Whole Kingdom	Bangkok Metro-polis	Central region	Northern region	North-eastern region	Southern region
All sectors	3.32	5.57	3.45	3.35	2.84	3.01	6.49	8.29	6.64	4.89	6.36	5.89
1 A Sector	2.41	-0.84	2.13	2.66	2.54	2.07	4.19	1.89	5.85	3.66	1.70	5.11
2 M Sector	5.68	6.20	5.93	5.45	4.74	6.20	8.14	9.91	6.58	3.73	4.04	5.06
Mining	0.8	-1.55	0.48	-0.95	4.00	2.95	6.28	0	8.64	5.01	5.89	8.31
Manufacturing	6.29	6.65	6.51	5.45	5.21	6.90	8.99	10.95	7.45	0.60	2.58	0.79
Construction	6.40	5.33	6.02	7.59	6.57	9.82	6.30	9.54	0.94	4.18	4.74	6.89
Utilities	8.14	6.67	9.09	12.73	10.00	8.57	11.21	3.21	13.51	5.85	7.34	3.94
Transport	4.32	5.69	3.32	4.00	2.64	4.54	6.95	8.06	-0.11	5.94	4.67	5.49
3 S Sector	5.40	5.67	4.40	5.83	5.56	6.44	6.29	6.70	7.46	7.35	6.56	7.35
Commerce	5.82	7.05	5.48	6.78	6.35	6.76	5.58	5.59	9.36	7.07	3.88	6.37
Services	5.07	4.51	3.46	4.93	5.02	6.16	7.50	8.10	4.25	7.70	5.14	8.72

Sources: Basic data from Population census, National Statistics Office, Prime Minister's Office, Thailand; and The National Economic and Social Development Board, Prime Minister's Office, Thailand.

During 1970-80, the north had the highest labor absorption rate of income, followed by Bangkok, central, south and northeast (see Table 21). The northeast, being the poorest in terms of GDP per capita and the lowest in employment opportunity in terms of labor absorption rate of income, deserves our special attention. More efforts should be put to develop this region in the future.

Thus, it is very clear from our investigation that the regional disparity in terms of income generation and employment opportunities is great. This has been the result of the government development policy which gave no attention to the problem of regional development during the First and Second National Socioeconomic Development Plans. Although regional planning was included in the Third and Fourth Plans, the results had been very discouraging.

7. Educated Unemployment

With the increased enrolment in the secondary and higher education in the late 1960s and the early 1970s, a new labor force with higher educational attainment is expected to increase in the 1980s. However, given the projected slowdown of growth in the 1980s, the future prospect for employment of persons with high educational attainment is not so bright.

The employed persons by industry group and the levels of educational attainment for 1971 and 1981 are presented in Tables 22 and 23, respectively. About 95 per cent of labor with educational attainment of 13 years and more, namely vocational, teacher training, technical vocational and academic education, in 1971 and about 90 per cent in 1981, were employed in the M and S sectors. However, the S sector hired 70.6 per cent of the total employment of persons with vocational training, 94.2 per cent with teacher training, 77 per cent with technical vocational training, and 82.3 per cent with university education in 1981. Among the industries under the S sector, the services industry had a bigger share in employment of labor with higher educational attainment. Since the government sector is the biggest employer in the services industry, its restriction to limit the expansion of governmental personnel to less than 2 per cent a year in the last few years has resulted in an increase in the number of educated unemployed persons, especially among the new graduates. Although the overall unemployment rate among the educated laborers (see Table 24) ranged from 5 to 8 per cent in 1981, it may not be considered very high. But with the expected increase in the supply and the shrinking demand by the government sector, the educated unemployed is expected to increase in the future.

Table 21 -- Labour Absorption Rate of Income, by Region, 1970-1980

Sector	Whole Kingdom	Bangkok Metro-polis	Central region	Northern region	North-eastern region	Southern region
All sectors	0.511	0.672	0.520	0.685	0.447	0.511
1 A Sector	0.575	-.444	0.364	0.727	0.540	0.405
2 M Sector	0.697	0.626	0.840	1.461	1.173	1.225
Mining	0.127	0	0.056	-.190	0.581	0.355
Manufacturing	0.699	0.607	0.874	9.083	2.019	8.734
Construction	1.015	0.559	6.404	1.816	1.407	1.425
Utilities	0.726	2.078	0.673	2.176	1.362	2.175
Transport	0.621	0.706	-30.182	0.673	0.565	0.834
3 S Sector	0.858	0.846	0.590	0.793	0.848	0.876
Commerce	1.043	1.261	0.584	0.959	1.637	1.061
Services	0.676	.557	0.769	0.640	.977	0.706

Sources: Basic data from 1) Population Census, National Statistical Office, Prime Minister's Office, Thailand, and 2) The National Economic and Social Development Board, Office of the Prime Minister, Thailand.

Table 22 — Employed Persons by Industry Group and Level of Educational Attainment, 1971
(Whole Kingdom)

Major industry group	None	Elementary		Vocational	Academic	Technical		Teacher Training	Others	Total
		and Kindergarten	Secondary and Pre-university			Vocational	Academic			
All sectors (Per cent of total)	2,397.1 100.0	13,418.0 100.0	551.6 100.0	59.0 100.0	63.0 100.0	17.8 100.0	105.2 100.0	5.9 100.0	16,618.7 100.0	
A Sector (Per cent of total)	1,943.5 100.0	11,153.2 83.1	56.7 10.3	2.4 4.1	.1 .2	— —	1.8 1.7	— —	13,157.7 79.2	
M Sector (Per cent of total)	115.0 4.8	856.0 6.4	102.1 18.5	13.1 22.2	7.5 11.9	3.2 18.0	.4 .4	2.9 49.1	1,095.0 6.6	
Mining (Per cent of M sector)	3.0 2.6	14.9 1.7	.8 .8	— —	.2 2.7	.1 3.1	— —	— —	19.0 1.7	
Manufacturing (Per cent of M sector)	85.0	517.4 60.4	47.4 46.4	4.1 31.3	2.8 37.3	.7 21.9	.1 25.0	.3 10.3	657.7 60.1	
Construction (Per cent of M sector)	15.2 73.9	157.2 18.4	11.2 11.0	4.2 32.1	.5 6.7	13.5 15.6	.1 25.0	.1 3.4	189.0 17.3	
Utilities (Per cent of M sector)	—	5.2 .6	8.0 7.8	2.6 19.8	1.6 21.3	1.0 31.3	.1 25.0	.7 24.1	19.1 1.7	
Transport (Per cent of M sector)	11.8 10.2	161.3 18.8	34.7 34.0	2.2 16.8	2.4 32.0	18.9 28.1	.1 25.0	1.8 62.0	215.2 19.6	
S Sector (Per cent of total)	338.6 14.1	1,400.1 10.4	392.6 71.2	42.2 71.5	54.9 87.2	14.5 31.5	103.1 98.0	3.2 54.2	2,349.1 14.1	
Commerce (Per cent of S sector)	231.7 68.4	783.1 55.9	132.0 33.6	16.2 38.4	13.3 24.2	2.2 15.2	.3 .3	.6 18.7	1,179.3 50.2	
Services (Per cent of S sector)	106.9 31.6	617.0 44.1	260.6 66.4	26.0 61.6	41.6 75.8	12.3 84.8	102.8 99.7	2.6 81.2	1,169.8 49.8	
Unknown (Per cent of total)	.1 .0	8.1 .1	.3 .1	— —	.1 .2	— —	— —	— —	2.3 .0	

THAILAND

(Whole Kingdom)

Major industry group	None	Elementary and Kindergarten		Secondary and Pre-university		Vocational	Academic	Technical Vocational	Teacher Training	Others	Total
		and		and							
All sectors (Per cent of total)	1,925.5 100.0	20,138.2 100.0	1,149.6 100.0	342.2 100.0	207.4 100.0	89.2 100.0	410.1 100.0	97.8 100.0	24,366.0 100.0		
A Sector (Per cent of total)	1,515.8 78.2	15,628.7 77.6	288.6 25.1	23.9 7.0	2.8 1.4	2.2 2.4	14.0 3.4	49.9 51.0	17,525.9 71.9		
M Sector (Per cent of total)	134.8 6.9	2,189.4 10.9	254.0 22.1	74.9 21.9	33.5 16.2	17.2 19.3	8.6 2.1	14.2 14.5	2,743.4 11.3		
Mining (Per cent of M sector)	2.9 2.1	46.8 2.1	6.7 2.6	1.1 1.5	.5 1.5	.5 2.9	1.0 11.6	.1 .7	59.7 2.2		
Manufacturing (Per cent of M sector)	101.8 75.9	1,415.2 64.6	143.1 56.3	36.3 48.5	17.3 51.6	9.1 52.9	5.6 65.1	11.9 83.8	1,715.7 62.5		
Construction (Per cent of M sector)	19.2 14.3	401.2 18.3	31.5 12.4	6.9 9.2	3.2 9.6	1.4 8.1	.5 5.8	1.1 7.7	487.1 17.6		
Utilities (Per cent of M sector)	.3 .2	32.0 1.5	13.6 —	12.5 16.7	6.2 18.5	4.1 23.8	.3 3.4	— —	69.0 2.5		
Transport (Per cent of M sector)	9.9 7.4	294.1 13.4	59.1 23.3	18.1 24.2	6.3 18.8	2.1 12.2	1.2 14.0	1.1 7.7	391.9 14.3		
S Sector (Per cent of total)	273.4 14.2	2,320.1 11.5	604.3 52.6	241.7 70.6	170.6 82.3	68.7 77.0	386.4 94.2	32.1 32.8	4,097.3 16.8		
Commerce (Per cent of S sector)	201.3 73.6	1,389.9 59.9	258.6 42.8	98.4 40.7	54.0 31.7	16.0 23.3	9.5 22.5	16.2 50.5	2,043.9 49.9		
Services (Per cent of S sector)	72.1 26.4	930.2 40.1	345.7 57.2	143.3 59.3	116.6 68.3	52.7 76.7	376.9 97.5	15.9 49.5	2,053.4 50.1		
Unknown	—	.3	—	—	—	—	—	—	.3		

Table 24 — Utilization of Labour of Population Aged 11 Years and Older, by Level of Education
(in thousands)

Utilization of labour	None		Elementary and kindergarten		Secondary and Pre-university		Vocational	
	1977	1981	1977	1981	1977	1981	1977	1981
1) Total population	3,744.7	3,283.1	22,862.6	26,549.0	1,473.3	2,060.2	360.8	665.0
2) Persons in labour force (Per cent of total)	2,208.7 59.0	1,929.7 58.8	16,731.0 73.2	20,250.6 77.3	840.6 57.1	1,191.4 57.8	233.9 64.8	370.7 55.7
2.1 Adequately utilized (Per cent of labour force)	1,302.0 59.2	1,494.0 77.4	10,377.2 62.0	16,259.4 79.2	708.2 84.2	937.8 78.7	212.9 9.0	304.1 82.0
2.2 Inadequately utilized (Per cent of labour force)	7.0 .3	431.6 22.4	6,268.3 37.5	3,884.0 18.9	95.0 11.3	211.7 17.8	21.0 1.0	88.2 10.3
2.3 Unemployed (Per cent of labour force)	900.7 40.8	4.1 .2	85.5 .5	107.2 .5	37.4 4.4	41.9 3.5	15.0 6.4	28.4 7.7
3) Persons not in labour force (Per cent of total)	1,535.8 41.0	1,353.2 41.2	6,131.1 26.8	6,297.8 23.7	632.3 42.9	867.6 42.1	126.6 35.1	294.0 42.2
3.1 Work around house (Per cent of those not in labour force)	436.2 28.4	319.1 23.6	1,415.2 23.9	1,200.3 19.1	81.2 12.8	85.8 9.9	12.9 10.2	14.8 5.0
3.2 Student (Per cent of those not in labour force)	6.9 .5	6.3 .5	3,471.6 56.6	4,066.0 79.4	481.8 70.2	683.6 78.8	105.1 83.0	252.3 85.8
3.3 Waiting for agricultural season (Per cent of those not in labour force)	80.3 5.2	20.5 1.5	606.9 9.9	159.0 2.5	7.6 —	7.8 —	— —	— —
3.4 Others (Per cent of those not in labour force)	1,012.0 65.9	1,006.7 74.4	585.6 9.6	871.1 13.8	10.5 —	90.3 10.4	8.4 6.6	26.6 9.0

THAILAND

	Academic		Technical Vocational		Teacher Training		Others		Total	
	1977	1981	1977	1981	1977	1981	1977	1981	1977	1981
1)	233.7	239.2	49.1	102.7	333.9	459.2	62.3	147.5	29,020.3	33,505.9
2)	121.5	222.7	43.7	95.0	253.1	418.9	43.3	97.9	20,475.8	24,576.6
	90.9	93.1	89.0	92.5	75.8	91.2	69.5	66.4	70.6	73.4
2.1	113.5	193.5	33.6	68.7	232.1	395	36.2	64.3	13,021.7	19,716.8
	92.4	86.9	76.9	72.3	91.7	94.3	83.6	65.7	63.6	80.2
2.2	1.9	13.9	7.6	20.6	7.9	15.1	7.1	33.4	6,415.8	4,648.5
	1.6	6.2	17.4	21.7	3.1	3.6	16.4	34.1	31.3	18.9
2.3	6.1	15.3	2.5	5.7	13.1	8.8	.2	.2	1,060.5	4,860.1
	5.0	6.9	5.7	6.0	5.2	2.1	.5	.2	5.2	19.8
3)	11.9	16.3	5.3	7.7	80.7	40.1	19.6	49.1	8,543.3	8,925.8
	8.9	6.8	10.8	7.5	24.2	8.7	31.5	33.3	29.4	26.6
3.1	2.4	3.4	1.3	2.0	6.6	6.2	4.6	6.8	2,010.4	1,638.4
	20.2	20.9	24.5	26.0	8.2	15.5	23.5	13.8	23.5	18.4
3.2	2.5	-4.9	1.2	1.7	62.0	27.5	4.6	-.3	4,135.7	5,042.6
	21.0	30.1	22.6	22.1	76.8	68.6	23.5	.6	48.4	56.5
3.3	-	-	-	-	.1	-	-	1.1	694.9	188.4
	5.2	7.8	2.4	3.6	11.4	6.1	11.0	40.3	8.1	2.1
3.4	43.7	47.6	45.3	46.8	14.1	15.2	56.1	82.1	1,696.5	2,052.4
									19.9	23.0

8. Conclusion

In spite of three decades of sustained growth, full employment in the Thai economy is still far from reality. Underemployment and unemployment will remain major problems of the 1980s. In order to lessen the pressure arising from high population growth, a more vigorous family planning campaign must be promoted to bring the population growth down to less than 2 per cent per annum in the 1980s.

An unbalanced growth between regions results in unequal distribution of income, population and employment. It is, therefore, imperative that regional planning be made as one of the top priorities in the economic development policy of the 1980s. Measures to reduce income disparity between regions such as rural development and industrial development in the rural and small town areas should be emphasized in the 1980s. Furthermore, since the agricultural sector still plays a paramount role in labor absorption in the 1980s, underemployment and unemployment cannot be improved unless agricultural productivity is improved.

Although agricultural development should be emphasized, we cannot afford not to develop the M and S sectors. The industries which have a high employment absorption rate of income should also be promoted in order to absorb the increasing supply of labor.

Even though educated unemployment in general may not be a serious problem in the 1980s, it will be a serious one in certain fields such as social science, humanities, and teacher training. Some measures to restructure the educational system in response to the pattern of demand of labor with higher educational attainment are needed. Since most of the educated laborers are employed by the M and S sectors, measures to increase employment of these two sectors will benefit the educated laborers.

REFERENCES

- Akrasanee, N. *et al.* (1983), *Rural Off-Farm Employment in Thailand*, Bangkok: The Industrial Management Co., Ltd.
- Chau, Lawrence (1976), "Industrial Growth and Employment in Hongkong," *The Philippine Economic Journal*, XV:1 & 2 (November): p. 94.

- Ingram, J.C. (1971), *Economic Change in Thailand 1850-1970*, Stanford, California: Stanford University Press.
- Oshima, H.T. (1983), *The Transition to an Industrial Economy in Monsoon Asia*, Manila: Asian Development Bank.
- Oshima, H.T. (1983), "Labor Absorption in East and Southeast Asia: Summary, Perspective, Prospects," *The Philippine Economic Journal*, XV: 1 & 2:4-6.
- Silcock, T.H. (1967), *Thailand: Social and Economic Studies in Development*, Canberra.
- Spoelstra, N. and Isarangkun, C. (1976), "Labor Absorption in Thailand," *The Philippine Economic Journal*, XV: 1 & 2 (November): p. 253.
- Suchart Pasith-rathsint, "Leading Demographic and Social Issues of Thailand in the 1980s," *Thailand in the 1980s: Significant Issues, Problems and Prospects*, Bangkok: TURA Institute, p. 11.
- World Bank (1982), *Thailand Industrial Sector Background Report: Volume I*, Washington D.C.
- Xuto, S. et al. (1981), *Thailand in the 1980s: Significant Issues, Problems and Prospects*, Bangkok: TURA Institute.