

Final Report on  
Data Collection Survey on Empirical  
Analysis on Employment and Regional  
Disparity Alleviation  
in Thailand

September, 2013

Japan International Cooperation Agency (JICA)

Faculty of Economics, Saitama University

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Views expressed in the Report are those of the authors and contributors and do not necessarily represent the official views of JICA.

## Preface

During the period between the latter half of the 1980s and the first half of the 1990s, Thailand improved its investment environment including the social and economic infrastructure and actively invited foreign direct investment. Thanks to these efforts, the country saw unparalleled economic growth and sophistication of the industrial structure. The process of economic growth, however, concentrated industrial capital in the metropolitan areas and divided the country into the industrial sector (metropolitan areas) and agricultural sector (the rest of the country), widening the regional disparity. But still Thailand surprisingly achieved to keep the unemployment rate below 1% and is tackling the disparity through expansion of regular employment.

This survey aimed to analyze why the regional disparity widened in the process of industrialization and economic development and how the country redressed it, as well as what role Japan's assistance played in the course. Through the analysis and based on the Thai experience, the survey also aimed to gain implications for Thailand's future policy to avoid the "middle-income trap" and knowledge necessary for Japan to jointly tackle common issues of the Mekong region such as ASEAN connectivity and disparity alleviation.

This survey report was prepared chiefly by Dr. Masaharu Nagashima, Professor of Saitama University and also by Mr. Satoshi Iijima, Professor of Saitama University and Ms. Miwa Yamada, Director of the Law and Institution Studies Group, Inter-disciplinary Studies Center of the Institute of Developing Economies, Japan External Trade Organization. We also acknowledge thoughtful and helpful comments from Dr. Michihiro KAIYAMA, Professor of Yamagata University, and Dr. Kyosuke KURITA, Assistant Professor of Kwansai Gakuin University. Dr. Thoedsak CHOMTOHSUWAN and Ms. Osatis CHADATAN at extended a helping hand in analyzing data and materials in Thai language. We would also like to take this opportunity to thank all concerned for support and assistance.

September 2013

Koki HIROTA  
Director General of Southeast Asia and Pacific Department  
Japan International Cooperation Agency (JICA)

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## **Introduction**

As widely known, it is Field Marshal Sarit Thanarat (1908 - 1963) who became premier of Thailand in January 1959 that steered the modernization of the Thai economy. Sarit toppled the Phibul administration in a coup d'état in October 1957, and took the helm of the politics with his military power. The Sarit regime was so called a dictatorship in the name of economic development, under which the military government held power and promoted economic development as a top priority. Under his regime, technocrat formulated various development policies and the government put them into practice. As for industrialization, the government of Prime Minister Sarit gave up the state-led economic development program which had advanced slowly, and oriented itself to private-sector-led economic development via promoting foreign investment in the country.

In 1959, the Board of Investment (BOI) and the National Economic Development Board (NEDB) were established, and in October 1960, the Industrial Investment Promotion Act was enacted to stipulate preferential treatment to and regulations of foreign direct investment. The act was amended in February 1962, based on which the Sarit government encouraged foreign investment in industry through the preferential treatment and aimed at import substitution industrialization while protecting and fostering domestic private industry through import tariffs.

Meanwhile, a study team of the World Bank surveyed the Thai economy for a year starting in July 1957, published the results and gave recommendations in 1959 to the Thai government. The recommendations chiefly concerned (i) improvement in trade balance, (ii) use of market mechanism, (iii) securing of public revenue sources and (iv) promotion of public work. Accepting the recommendations, the Sarit administration promoted import substitution industrialization to improve the trade balance and sought for private-sector-led industrialization by introducing foreign capital for use of the market mechanism. The Industrial Investment Promotion Act was also a measure to use the market mechanism. As for promotion of public work, the Thai government drew up development plans and built social infrastructure with assistance from foreign governments and international institutions such as the World Bank. The current industrialization policy of Thailand is basically the same as that of the time, except that export-oriented industrialization has replaced import substitution adopted by the Sarit administration: the country has been striving to promote the policy through introduction of foreign capital since the mid-1960s to the present.

Promotion of industrialization requires capital accumulation on a large scale. A development program for the Eastern Seaboard, promoted by the Prem Tinsulanonda administration in the wake of discovery of a natural gas field in the Gulf of Thailand in 1973, was launched in parallel with the start of introduction of foreign capital. Thailand had steadily promoted import substitution industrialization since the latter half of the 1960s and throughout the 1970s, but faced an increased

balance of international payments deficits due to the second oil crisis in 1979 and a sharp fall in prices of agricultural products since 1982. To that end, the country received in 1981 an emergency assistance loan from IMF, and in 1982 and 1983 structural adjustment loans (SALs) from the World Bank.

The conditionality of lending from the IMF and the World Bank included reorganization of state-run enterprises, devaluation of baht, tightening financial and monetary policy, and easing and abolishment of various regulations. Having accepted the conditionality, the Thai government gave up import substitution industrialization adopted over 20 years since the Sarit administration, and shifted to policy of fully opening up to the outside world. In other words, having received the IMF emergency loan and the World Bank's SALs, Thailand was obliged to give up import tariffs which were the cornerstone of import substitution industrialization and steered itself in the direction of export-driven industrialization. The Plaza Accord, an agreement signed in September 1985 at a conference of the finance ministers and central bank presidents of five industrial nations in New York City stimulated Thailand's private-sector-driven and export-oriented industrialization through introduction of foreign capital. With most currencies including Japanese yen appreciating, enterprises of Japan and Newly Industrializing Economies (NIEs) gained a sense of crisis about the difficulty in maintaining competitiveness in export with domestic production and began to transfer their production bases to China, Thailand and other countries.

In such circumstances, in 1988, foreign direct investment in Thailand sharply increased: while the amount of foreign capital flowing into construction, trade, finance and various other industries increased, that in the manufacturing industry conspicuously increased. Among the sharply increased foreign capital flowing into the country, the ratio of Japan's direct investment was exceptionally higher than that of any other country. In three years between 1988 and 1990 when direct investment in Thailand saw a considerable rise, direct investment from Japan accounted for 40 percent of the total direct investment in Thailand (50 odd percent in 1988). Thanks to the foreign capital inflow and an expansion in output of the manufacturing sector, real GDP growth rate recorded a double-digit increase in three consecutive years from 1988 to 1990<sup>1</sup>. The development program for the Eastern Seaboard, forced to be revised due to the sluggish economy since the second oil shock, picked up new momentum backed by high growth of the Thai economy since the latter half of the 1980s.

Incidentally, there must be factors other than change in foreign exchange rate when enterprises decide to invest in Thailand rather than many other countries. In fact, there were some factors in the investment environment in Thailand which attracted foreign capital. These factors seemed to work organically and integrally to increase direct investment in the country.

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<sup>1</sup> The real GDP growth rate in 1988-1990 was 13.29%, 12.19% and 11.62%, respectively.



The first factor is cheap and quality labor. In recent years, particularly after the Asian Financial Crisis, Thailand conducted a series of educational reform as discussed in detail in Chapter 5. In 1999, the National Education Act was enacted as the first basic law on education in Thailand, followed by formulation in 2001 of basic educational curriculums. This made 12 years from primary (elementary school) to upper secondary education (high school) a consistent basic education. In 2002, the first nine year education up to lower secondary education which is mandatory was made free, and in 2009, tuition fees for the entire 15 year basic education including upper secondary education, together with 3 year kindergarten levels of pre-primary education, were made free. As a result, the numbers of students going on to and enrolled at upper secondary schools increased dramatically, having doubled over the decade up to 2010. The school attendance rate for upper secondary education was close to 70 percent. From the viewpoint of foreign enterprises, the increased availability of workers who are graduated from an upper secondary school (high school) or vocational school and have academic achievements and good knowledge can be counted as a decisive factor of selecting Thailand as destination of direct investment.

The second factor is well-developed social infrastructure and industrial estates. The government since the Sarit administration has been promoting development of social infrastructure and is beginning to achieve an effect induced by the inflow of foreign capital. Thailand was equipped from a relatively early period with social infrastructure essential for corporate production activities, such as electricity, industrial water, road infrastructure and harbors. The public and private sectors have built a great number of industrial estates chiefly in the Bangkok metropolitan area, the Eastern Seaboard and the central region which was devastated by severe flooding in 2011 and induced direct investment inflows from various countries. Japanese ODA loan also contributed to construction of industrial infrastructure: Port of Laem Chabang, a deep water port for large container vessels, as well as industrial estates, railroads, water pipes, roads and other industrial facilities were constructed in the Eastern Seaboard for which the Thai government resumed the development plan as a result of the rapid economic growth since the latter half of the 1980s<sup>23</sup>.

The third factor is past investment records and hysteresis in key industries including the automobile industry. Japanese automobile makers have long deployed production activities in Thailand (since the 1960s). Because of the nature of automobiles, production process involves many stages and requires many parts to assemble. Thus, the more parts are procured locally, the more parts makers and supporting industries get involved in production activities of the automobile makers. Thus, as for automobile and other industries which require many supporting industries, Thailand is

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<sup>2</sup> Laem Chabang Port opened in 1991. The volume of cargo handled exceeded in 1998 that of Bangkok's Khlong Toei Port, making Laem Chabang Port the largest port in Thailand.

<sup>3</sup> The project for development of the Eastern Seaboard is a successful case where liaison of Japan's technical cooperation and financial cooperation worked appropriately. A total of 16 supportive projects were put into practice, and a total of 27 Japanese ODA loans were granted through OECF (Overseas Economic Cooperation Fund; one of predecessors of present JICA).

chosen as destination of direct investment because of not only its excellent investment environment but also hysteresis or necessary connection in production process with the past when foreign capital enterprises did directly invest in the industries in Thailand.

Other than the factors discussed in fragments so far, direct investment inflows from various countries to Thailand since the latter half of the 1980s are also attributable to the fact that the country has complied with “use of market mechanism,” one of the World Bank recommendations that the Sarit administration accepted in the 1960s, and “easing and abolishment of various regulations,” a part of the conditionality that the World Bank imposed in 1982 and 1983 in exchange for the structural adjustment loans. This means to foreign direct investors that free economic activities are guaranteed in Thailand. The country appears to be still attractive to foreign investors because of the above fact and its stable political culture in medium- and long runs despite repeated political changes, coups and other political confusions in a short run.

On the other hand, there is concern about macroeconomic stability and development in Thailand, which was bombarded with the currency crisis in July 1997 and the subsequent financial and economic crisis for several years. In February 2001 when the country was still in the midst of the economic crisis, Thaksin Shinawatra took power and started to steer the Thai economy in a considerably different way: the prime minister himself took the lead in policy planning and initiated distinctive economic policies called “Thaksinomics” particularly for the benefit of ordinary people. A series of these policies was called a “Dual Track Policy” in that they were based on two axes: one was “domestic demand promotion” stimulating private consumption and the other was “foreign demand expansion” promoting export and introduction of foreign capital. The Policy aimed to put the Thai economy back literally on the growth path by simultaneously carrying out the two different measures.

One of the big aims, among other things, of the domestic demand promotion policy is to create effective demand chiefly by vitalizing rural areas, small and medium-sized enterprise, and other grassroots local activities. Hence the Policy was compared of (i) the One Tambon One Product project; (ii) establishment of a village fund; (iii) a 30 baht universal healthcare scheme; (iv) an asset capitalization policy; (v) a debt moratorium for farmers, (vi) a micro-credit scheme and others. These policies worked well, so the Thai economy recovered within several years to the level before the currency crisis. As already stated, a series of policies under the Dual Track Policy aimed to create effective demand in the rural areas and vitalize the rural economy, and ultimately boost domestic demand. The policies listed above were different from each other in terms of the nature but common in terms of the objective that each of them aimed to inject liquidity into the rural areas. Thanks to the Thaksin administration’s policies, the Thai economy succeeded in taking off from the slump after the currency crisis. There were some ups and downs due to the 2007 subprime mortgage crisis and the

2008 Lehman shock, but the Thai economy steadily grew at the macroeconomic level and, in 2011, joined the categories of middle income countries thanks to various economic policies initiated under the Abhisit cabinet which was in power from December 2008 to August 2011 and the subsequent and current Yingluck administration.

Another old concern of Thailand's economy is regional disparity between urban and rural areas. Thailand has accumulated industrial capital in the Bangkok and the surrounding area in the process of industrialization. As a result of development of the Eastern Seaboard since the latter half of the 1980s, quite a few foreign capitals have built their production sites there, as well as in the metropolitan area. In other words, the country's industrialization has produced an urban-rural bipolar structure: the industrial sector in the metropolitan and nearby areas and the agricultural sector in the rest of the country. In such circumstances, the economic disparity between the industrial sector in the Bangkok metropolitan area and agricultural sector in other rural areas has been traditionally substantial compared to the situation in other countries in Southeast Asia. Then has the successful industrialization through export promotion and economic growth from the 1980s to the present reduced the economic disparity between the urban and rural areas? Now that the country belongs to the group of middle income countries, has the regional economic disparity been narrowed to some extent? This report thus is to consider the traditional issue of whether the Thai economy has achieved fair income distribution or whether the urban-rural economic disparity has been reduced. To find the facts, the report reviews trends in selected economic indicators.

This report is organized as follows: Chapter 2 discusses fairness of income and expenditures in Thailand at the macroeconomic level. Based on the analysis of using income and expenditure distribution tables as well as using income- and expenditure-based Gini coefficients, we can observe movement of the coefficients that can be illustrated graphically as a Kuznets' inversed U curve in the course of evolvement of Thai economy. Chapter 3 presents a trend in Thailand's poverty indicators. Time-series data show that economic growth has certainly contributed to a decline in low-income population, and that economic development has contributed to poverty reductions except the time when the economy was in crisis. Chapter 4 explains in detail the relation between Thailand's development policies and Japan's economic cooperation, presenting that official development assistance from Japan has in no small part to do with export-oriented economic development of Thailand. The chapter particularly highlights Japan's involvement in development of the Eastern Seaboard and the subsequent growth in the Thai economy. Chapter 5 discusses the causal relation between the educational system and economic growth. The discussion clarifies that young labor force graduated from lower and upper secondary schools and supplied through the formal labor market has contributed to the growth in manufacturing since the latter half of the 1980s when foreign capital started to flow in the country. Following the discussion in Chapter 5, the report discusses Thailand's labor market in Chapters 6 and 7. Chapter 6 focuses on the unemployment rate currently

under 1%, clarifying the reason for such a low level of the rate and whether or not the domestic labor market is in disequilibrium, from the perspectives of changes in employment and inflow of foreign workers in the manufacturing sector. Chapter 7 deals with the main feature of this report, analyzing individual questionnaire sheets of the survey to factory workers. The survey has revealed that quite a few workers from the northeastern provinces work in all the three regions surveyed. The chapter also presents a set of microeconomic data that prove high ratio of income transfer in the northeastern region. Chapter 8 attempts a comparative statics on impacts of changes in production factor endowments such as capital and labor on domestic wages and the number of workers in individual sectors. The analysis is carried out by setting the Thai economy in a two-sector neoclassical model.

The authors of this report wish to express their gratitude to many people for valuable support and cooperation. We are especially grateful for offering of useful data and helpful cooperation of Dr. Hiroyuki Taguchi of the Office of the National Economic and Social Development Board (NESDB) of the Government of Thailand. But responsibility for the text (with any possible errors) rests entirely upon the authors.

## Chapter 2 Income and Expenditure Equalities in Thailand

### 2.1 The Inversed U Hypothesis in Developing Countries

In general, income distribution in developing countries is less equal than that in advanced countries. In particular, it tends to deteriorate over time as a country is achieving a certain level of economic development. At an early stage of development, all citizens are equally poor and there is relatively small disparity in wealth among them, so income distribution remains relatively fair. Once the economy begins to grow, national income increases and disparity expands between rich and poor, resulting in less fair income distribution in the economy as a whole. However, it is believed that, as the government implements a series of economic measures to reduce poverty or increase income, the gap between rich and poor will be gradually corrected towards fairer income distribution again.

This chapter overviews the income and expenditure equalities, and their trends from the end of the 1980s to 2006 in Thailand. This report uses two types of statistics in considering national income and expenditures, and the degrees of income and expenditure distributions at the macroeconomic level: one is income and consumption distributions where the population is divided into 20 classes in terms of income and consumption levels, and the other is Gini coefficients based on two types of data, that is, income and expenditure data<sup>4</sup>.

Simon Smith Kuznets' Inversed U Hypothesis between economic development and income distribution<sup>5</sup> is a theory of explaining a trend in the degree of fairness of income distribution or the Gini coefficient as an economy moves on to advanced stages. At an early stage of economic development, the most of the populations are averagely poor and income distribution is equal, so the Gini coefficient is low. As the economy grows, the economic disparity increases and income distribution becomes more unequal so that the Gini coefficient becomes higher. When the economy grows further, economic policies that equalize income distribution begin to show an effect. Or rather, income disparity as a whole economy reduces as the poor population decreases and the middle income population increases. In this process, the Gini coefficient starts to fall at a certain point and it is considered that income distribution at the macroeconomic level becomes more equal. The name of the theory originates from an inversed U-shaped move of the Gini coefficient which increases, reaches a peak and falls again as the economy moves on development stages.

This chapter examines the current state and historical trend of income distribution in Thailand which has achieved rapid economic growth since the latter half of the 1980s, experienced the economic and financial crises triggered by the 1997 currency crisis and successfully led the economy out of the crises. The chapter then attempts to find out whether the Thai economy has already experienced or is beginning to enter the stage where income distribution moves toward equality as

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<sup>4</sup> The Gini coefficient, developed by Italian social statistician Corrado Gini (1884-1965), is a statistic to measure the inequality of income distribution in society. This report uses two types of Gini coefficients: "income-based" and "expenditure-based" Gini coefficients.

<sup>5</sup> For Inversed U Hypothesis, see Kuznets, Simon S., (1963) "Quantitative Aspects of the Economic Growth of Nations: Part VIII, Distribution of Income by Size," *Economic Development and Cultural Change*, Vol. 11.

suggested by the Kuznets' Inversed U Hypothesis. The equality of income distribution or consumer expenditure is directly linked to urban-rural economic disparity and nationwide poverty reductions in developing countries, and thus this study aims to offer a useful criterion for assessment of soundness of a process of economic development.

## 2.2 Income Distribution

Table 2.1 shows income distribution in Thailand during the period 1988-2006<sup>6</sup>. The population is divided into 20 income classes and the trend in the percentage of each class over the period is presented at constant price year 2000. Figure 2.1 presents the data in the form of a line graph, which is normally called "figure of income distribution." Time, or year, is on the horizontal axis and the time-series values, or the percentages of individual income classes to the entire income of the economy, are measured on the vertical axis. The lowest-income class is shown in blue at the bottom of the figure, where the average monthly income per head is 550 baht or less. The higher class has the higher average monthly income per head up to the highest income class, represented by red area in the figure, where the average monthly income per head is 10,500 baht or more.

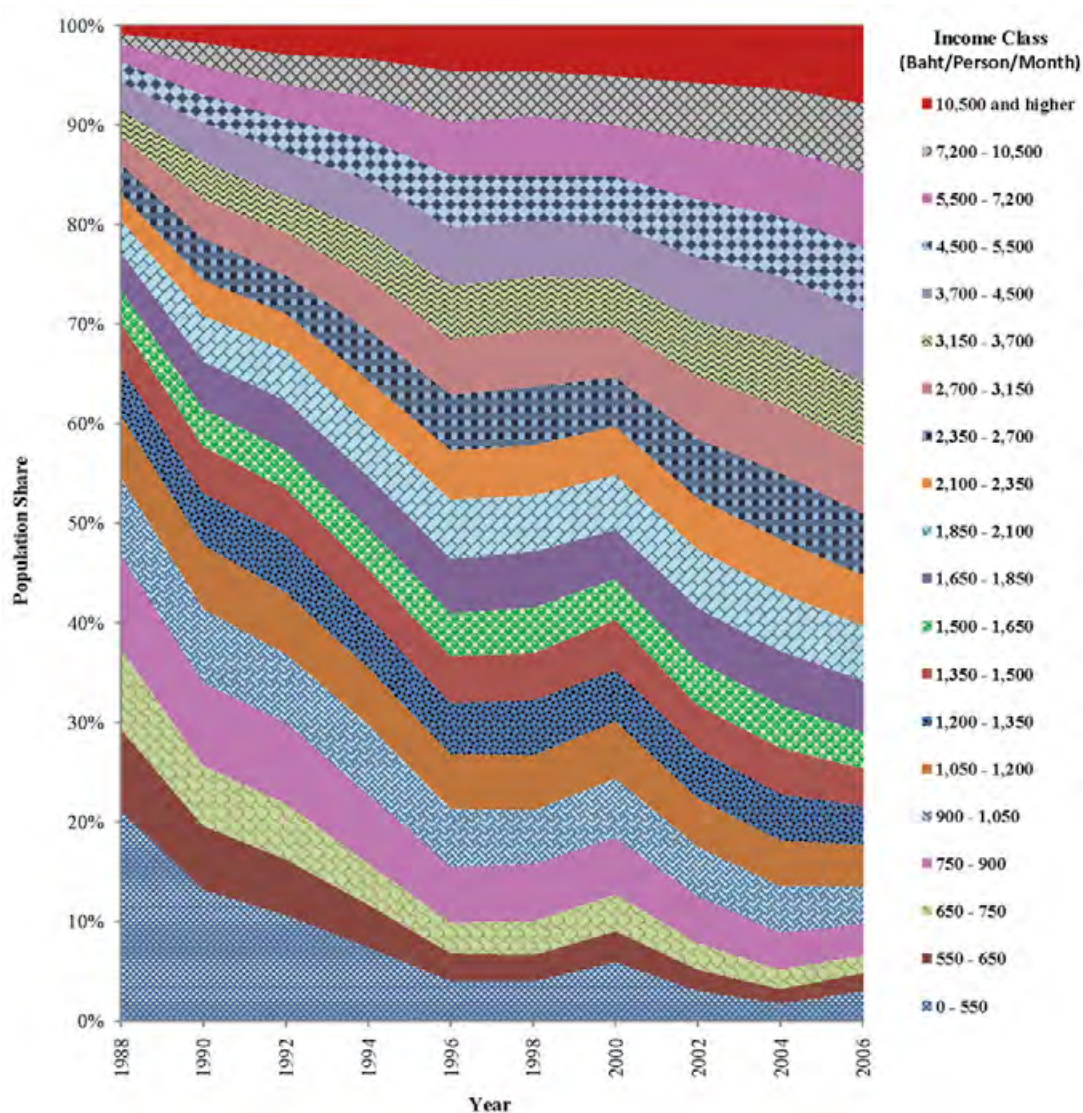
Table 2.1 Income Distribution of Thailand at Constant Price Year 2000

Income class	Income Range (Baht/Month)	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
1	0 - 550	19.57%	21.26%	13.22%	10.68%	7.46%	4.06%	4.02%	5.98%	3.06%	1.78%	3.05%
2	550 - 650	6.42%	8.13%	6.43%	5.62%	4.30%	2.79%	2.64%	3.10%	2.14%	1.48%	1.82%
3	650 - 750	5.98%	8.05%	6.10%	5.62%	4.15%	3.09%	3.43%	3.74%	2.67%	1.94%	1.81%
4	750 - 900	7.56%	9.38%	8.51%	8.15%	6.93%	5.62%	5.73%	5.68%	4.72%	3.72%	3.11%
5	900 - 1,050	6.23%	7.79%	7.40%	6.88%	6.99%	5.83%	5.38%	5.90%	4.99%	4.69%	3.78%
6	1,050 - 1,200	6.22%	6.24%	6.40%	6.15%	5.74%	5.51%	5.52%	5.73%	4.85%	4.56%	4.17%
7	1,200 - 1,350	5.22%	4.98%	5.20%	5.72%	5.20%	5.09%	5.55%	5.15%	4.99%	4.68%	3.93%
8	1,350 - 1,500	4.39%	4.29%	4.68%	4.65%	4.63%	4.71%	4.73%	5.05%	4.36%	4.63%	3.73%
9	1,500 - 1,650	3.73%	3.41%	3.85%	3.91%	4.18%	4.35%	4.59%	4.00%	4.48%	4.34%	3.69%
10	1,650 - 1,850	4.35%	3.65%	4.72%	4.98%	5.18%	5.39%	5.57%	4.93%	5.32%	5.40%	5.19%
11	1,850 - 2,100	4.72%	3.35%	4.62%	4.99%	5.19%	5.98%	5.65%	5.49%	5.84%	5.88%	5.52%
12	2,100 - 2,350	3.83%	2.66%	3.51%	3.76%	4.46%	4.94%	5.06%	4.89%	5.10%	5.32%	5.00%
13	2,350 - 2,700	3.90%	2.93%	4.21%	3.83%	5.06%	5.56%	5.85%	4.95%	6.02%	6.62%	6.18%
14	2,700 - 3,150	4.17%	2.72%	3.95%	4.32%	5.11%	5.65%	5.70%	5.04%	6.27%	6.79%	6.78%
15	3,150 - 3,700	3.54%	2.74%	3.76%	3.66%	4.85%	5.34%	5.34%	4.92%	5.54%	6.56%	6.41%
16	3,700 - 4,500	3.11%	2.80%	3.91%	4.42%	5.05%	5.85%	5.69%	5.35%	6.33%	6.48%	7.21%
17	4,500 - 5,500	2.27%	2.04%	2.85%	3.33%	4.22%	5.28%	4.50%	4.88%	5.86%	6.06%	6.42%
18	5,500 - 7,200	2.48%	1.72%	2.90%	3.35%	4.25%	5.33%	5.95%	5.13%	6.12%	6.75%	7.36%
19	7,200 - 10,500	1.50%	1.04%	2.28%	3.11%	3.77%	5.09%	4.53%	4.93%	5.62%	6.03%	7.09%
20	10,500 and higher	1.12%	0.80%	1.70%	2.87%	3.29%	4.55%	4.57%	5.06%	5.73%	6.31%	7.75%
Grand Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

<sup>6</sup> Sections 2.2 and 2.3 are analyses made by the Study Team based on data from the Household Socioeconomic Survey which were available at the time of the research activities.

Figure 2.1 Income Distribution of Thailand at Constant Price Year 2000

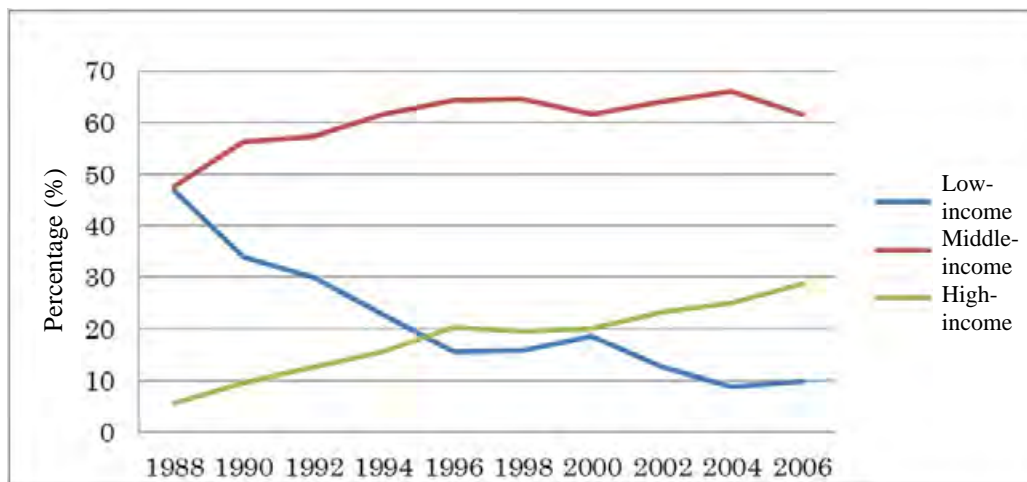


Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

Next, let us define that the term “low-income group” covers from the lowest income to the fourth lowest income classes; that the term “high-income group” covers from the highest income to the fourth highest income classes; and that the term “middle-income group” covers all the remaining classes which belong to neither high-income nor low-income group. In other words, low-income group is the lowest 20% in income and high-income group is the highest 20% in income. Table 2.2 shows trends in percentages of the three income group to the total income. Let us now use the figure of income distribution to investigate the trend in income distribution since the end of the 1980s in Thailand.



Table 2.2 Trends in Percentages of the Three Income group (1988-2006)



Income Group	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
<b>Low</b>	46.8	34.06	30.07	22.84	15.56	15.82	18.5	12.59	8.92	9.79
<b>Middle</b>	47.5	56.21	57.27	61.63	64.19	64.63	61.5	64.08	65.95	61.59
<b>High</b>	5.6	9.73	12.66	15.53	20.25	19.55	20	23.33	25.13	28.62

Source: Compiled by author with data from NESDB

In 1988, low-income group accounted for 46.82%, almost half of the whole population, but the following two years until 1990 saw the leveling off of income distribution in all the income groups, particularly in low-income group. This period also saw the sharpest decline in the percentage of the lowest income class. The borderlines among the income classes had been steadily downward from 1988 to 1996. The percentage of low-income group, which accounted for almost half of the whole population in 1988, fell to 15.56%, less than a third, in 1996, conspicuously showing a rapid reduction in poverty during the period in Thailand. In particular, it is worth mentioning that, among low-income group, the percentage of the lowest income class to all income classes rapidly fell: it was 21.26% in 1988 but fell to 4.06%, about one fifth, in 1996. On the other hand, the percentage of high-income group accounting for a mere 5.60% in 1988 steadily increased as the economy grew and almost quadrupled, 20.25%, in 1996.

Income distribution remained roughly constant for a year from 1996 to 1997, but in July 1997, the currency crisis occurring in Thailand severely hit its domestic economy. Figure 2.1 illustrates that, during the period 1998-2000, the percentage of high-income group remained almost unchanged, while that of middle-income group fell and that of low-income group increased. This indicates that an increased number of people flew from middle-income group to low-income group over the period. In other words, it is believed that the currency crisis and the subsequent economic crisis caused



bankruptcies and labor cuts in the Bangkok metropolitan and other urban areas, which temporarily increased the number of unemployed workers who eventually dropped to lower income classes.

Figure 2.1 illustrates that income distribution was becoming more and more equal for the subsequent period up to 2004. However, relatively higher income classes steadily expanded while the lowest income class in low-income group also expanded over 2004 to 2006. The proportion of the lowest income class was a mere 1.78% in 2004 but increased to 3.05% in 2006.

### 2.3 Expenditure Distribution

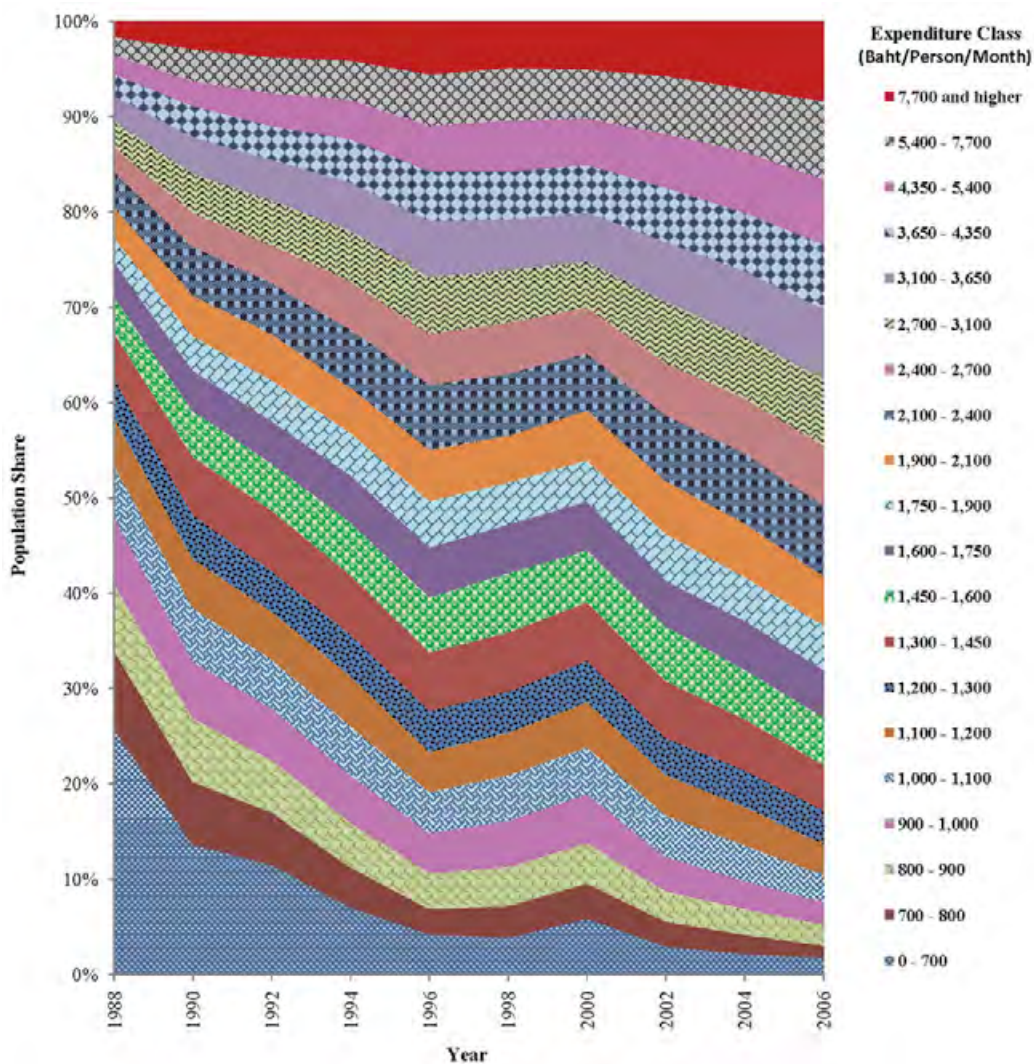
Table 2.3 shows expenditure distribution in Thailand during the period 1988-2006. The population is divided into 20 expenditure classes and the trend in the percentage of each class over the period is presented at constant price year 2000. Figure 2.3 presents the data in the form of a line graph, which is normally called “figure of expenditure distribution.” Time, or year, is on the horizontal axis and the time-series values, or the percentages of individual expenditure classes to the entire expenditure of the economy, are measures on the vertical axis. Different expenditure classes are presented in different colors and patterns for easier recognition: the lowest-expenditure class is shown in blue at the bottom of the figure, where the average monthly expenditure per head is 700 baht or less. The higher class has the higher average monthly expenditure per head up to the highest expenditure class, represented by red area in the figure, where the average monthly expenditure per head is 7,700 baht or more.

Table 2.3 Expenditure Distribution of Thailand at Constant Price Year 2000

Expenditure class	Expenditure Range (Baht/Month)	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
1	0 - 700	18.74%	25.70%	13.65%	11.54%	7.07%	4.24%	3.90%	5.91%	2.97%	2.17%	1.80%
2	700 - 800	6.21%	8.30%	6.58%	5.49%	4.23%	2.67%	3.34%	3.70%	2.62%	2.04%	1.28%
3	800 - 900	5.51%	6.99%	6.63%	5.53%	4.66%	3.80%	4.07%	4.25%	3.18%	2.70%	2.20%
4	900 - 1,000	4.87%	6.99%	5.97%	5.39%	4.96%	4.18%	4.86%	5.07%	3.61%	2.94%	2.35%
5	1,000 - 1,100	4.76%	5.49%	5.64%	5.13%	5.17%	4.28%	4.75%	4.93%	4.33%	3.75%	2.86%
6	1,100 - 1,200	4.43%	4.90%	5.18%	5.05%	5.24%	4.21%	4.48%	4.74%	4.24%	4.01%	3.24%
7	1,200 - 1,300	4.64%	4.13%	4.59%	4.56%	4.36%	4.32%	4.31%	4.36%	3.89%	3.83%	3.51%
8	1,300 - 1,450	5.06%	4.78%	6.12%	6.34%	6.28%	6.15%	6.23%	6.14%	5.98%	5.37%	4.77%
9	1,450 - 1,600	5.50%	3.85%	4.82%	4.95%	5.53%	5.79%	6.22%	5.46%	5.76%	5.18%	4.99%
10	1,600 - 1,750	4.48%	3.60%	4.22%	4.44%	4.94%	5.22%	5.11%	5.16%	4.78%	5.16%	4.98%
11	1,750 - 1,900	3.56%	2.53%	3.63%	4.31%	4.46%	4.87%	4.42%	4.30%	4.92%	4.60%	4.68%
12	1,900 - 2,100	4.48%	3.19%	4.25%	4.84%	4.73%	3.38%	4.92%	5.25%	3.56%	5.61%	5.19%
13	2,100 - 2,400	5.45%	3.74%	5.10%	5.30%	6.11%	6.83%	6.51%	5.90%	6.90%	7.37%	7.40%
14	2,400 - 2,700	3.80%	2.63%	3.54%	3.99%	5.05%	5.38%	5.36%	4.85%	5.49%	5.80%	6.32%
15	2,700 - 3,100	4.17%	2.74%	4.11%	4.67%	5.25%	5.87%	5.45%	4.73%	6.42%	6.44%	6.96%
16	3,100 - 3,650	4.02%	2.64%	3.85%	4.30%	5.11%	5.90%	5.31%	5.20%	6.24%	6.86%	7.38%
17	3,650 - 4,350	3.08%	2.27%	3.28%	3.51%	4.53%	5.19%	5.03%	4.98%	5.70%	6.12%	6.71%
18	4,350 - 5,400	2.87%	2.02%	2.58%	3.47%	4.11%	4.79%	5.39%	4.87%	5.64%	6.40%	6.84%
19	5,400 - 7,700	2.48%	1.88%	3.38%	3.77%	4.15%	5.40%	5.49%	5.13%	6.09%	6.63%	8.19%
20	7,700 and higher	1.89%	1.58%	2.87%	3.73%	4.06%	5.52%	4.84%	5.01%	5.68%	7.03%	8.35%
Grand Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

Figure 2.3 Expenditure Distribution of Thailand at Constant Price Year 2000

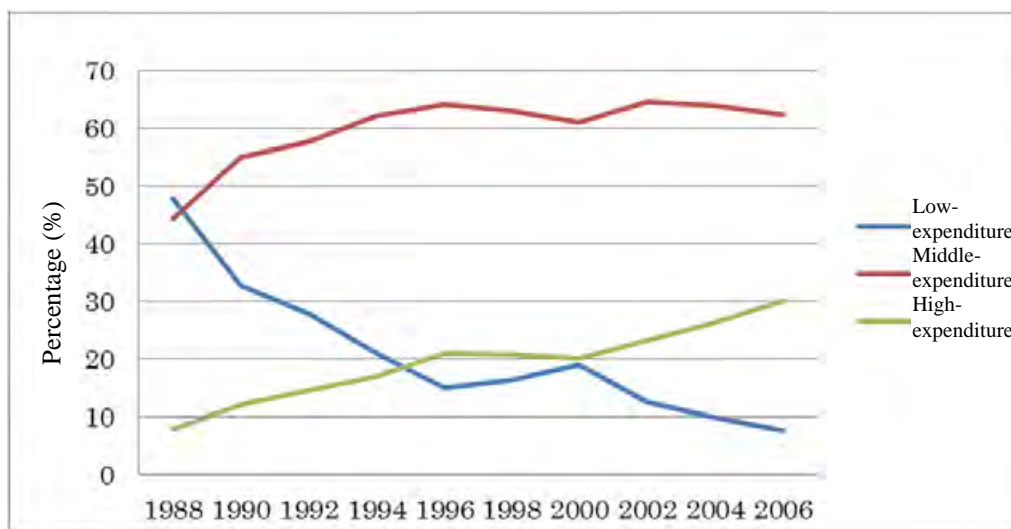


Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

As in the case of income distribution, let us define that the term “low-expenditure group” covers from the lowest expenditure to the fourth lowest expenditure classes; that the term “high-expenditure group” covers from the highest expenditure to the fourth highest expenditure classes”; and that the term “middle-expenditure group” covers all the remaining classes which belongs to neither high-expenditure nor low-expenditure groups. Table 2.4 shows time series percentages of the three expenditure groups to the total expenditure.

Generally, the figure of income distribution exhibits the identical trend to that of expenditure distribution in that income earned by a certain economic entity is basically consumed by the same entity. In developing countries, however, income distribution is often different from expenditure distribution. This phenomenon is chiefly due to the following two factors.

Table 2.4 Trends in Percentages of the Three Expenditure groups (1988-2006)



Expenditure Group	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
<b>Low</b>	47.98	32.83	27.95	20.92	14.89	16.17	18.93	12.38	9.85	7.63
<b>Middle</b>	44.27	55.06	57.57	62.23	64.21	63.08	61.08	64.5	63.97	62.28
<b>High</b>	7.75	12.11	14.48	16.85	20.90	20.75	19.99	23.12	26.18	30.09

Source: Compiled by author with data from NESDB

The first factor is income transfer from within and outside developing countries: domestic income transfer is chiefly money transfer from urban to rural areas. In Thailand, migrant workers from rural areas to the Bangkok metropolitan area, the Eastern Seaboard, industrial estates in the central region and other areas with industrial clusters send a part of their earnings to their hometowns. It is believed, in particular, that the amount of income transfer made by migrant workers from the northern and northeastern regions where the income level per head is relatively low is substantial at the entire macroeconomic level. Income transfer from abroad, on the other hand, is made by Thai workers in the Middle East and other countries in Asia for the benefit of their families at home: this amount is non-negligible<sup>7</sup> for the whole economy. Given that income earned in the metropolitan and industrial areas are transferred to wider rural areas and spent there, wealth disparity measured in terms of expenditure distribution is considered to be smaller than that in terms of income distribution.

Another reason for the figure of income distribution non-identical to that of expenditure distribution is an increase in expenditure due to loan transactions. Low-income group in particular borrows money from public and private financial institutions for various expenses and debt

<sup>7</sup> Thailand hosts millions of unskilled workers from “CLM countries” that are Cambodia, Laos and Myanmar. At the same time, some 150,000 Thai workers go abroad to work every year: 62% of Thai migrant workers go to countries in East Asia and 28% to the Middle East and Africa. For details, see Chapter 6 of this report and Yamada [2010].

repayments, which is likely to be a cause of the large gap in the forms of income and expenditure distributions.

The difference in the figures of income and expenditure distributions in Thailand is observable clearly in graphical forms as shown in Tables 2.2 and 2.4. Both the percentages of low-income group and low-expenditure group were the largest in 1988, when the former accounted for 46.82% and the latter for 47.98% of all the population. The percentages were the smallest in 2006, on the other hand, when low-income group accounted for 9.79% and low-expenditure group 7.63%, showing that the former outnumbered the latter by more than two percentage points.

A comparison of the line graph in 2.2 and 2.4 gives a clearer picture of differences in the moves of the three groups each of income and expenditure populations. First, the percentages of the lowest-income class and the lowest-expenditure class increased from 1998 to 2000 – immediately after the currency crisis – by 48.76% and 51.54%, respectively, but the margin of the increase was greater for the latter than for the former. This appears to be attributable to the fact that the economic crisis deteriorated employment in the Bangkok metropolitan area, causing migrant workers from rural areas to reduce the money transfer to their hometowns or move back to their hometowns and work at lower wages, which led to a decrease in expenditures. The second difference is that the lowest-income class accounted for 3.05% of all in 2006, up by 1.27 points from 2004 when the percentage was 1.78%, whereas the percentage of the lowest-expenditure class fell from 2.17% to 1.80% over the same period: they exhibited the opposite moves. One of the largest causes may be perhaps an increase in income sources other than earnings as seen in an increase in expenditures thanks to money transfer from urban to rural areas and borrowings in rural areas.

## 2.4 Gini Coefficient

### 2.4.1 Income-Based Gini Coefficient

This section uses Gini coefficients to look at income distribution since the end of the 1980s in Thailand. This report defines an income-based Gini coefficient as:

$$(2.1) \quad \text{Gini coefficient (income)} = 1 - \sum_{i=1}^{20} \{(\lambda_i - \lambda_{i-1}) \cdot (\eta_i - \eta_{i-1})\}, \text{ where}$$

$\lambda$ : the share of accumulated number of households,

$\eta$ : the share of accumulated household income, and

$i$ : the household income class value.

Table 2.5 lists time-series Gini coefficients during the period 1988-2006 for five regions in Thailand: the Bangkok metropolitan, central and east, north, northeast and south. Each region is divided into urban and rural areas. The coefficients were calculated based on income data and thus hereinafter called “income-based Gini coefficients” and distinguished from “expenditure-based Gini coefficients” discussed later. Figure 2.5 shows the trends in the Gini coefficients of the five regions and the whole country in line graphs.

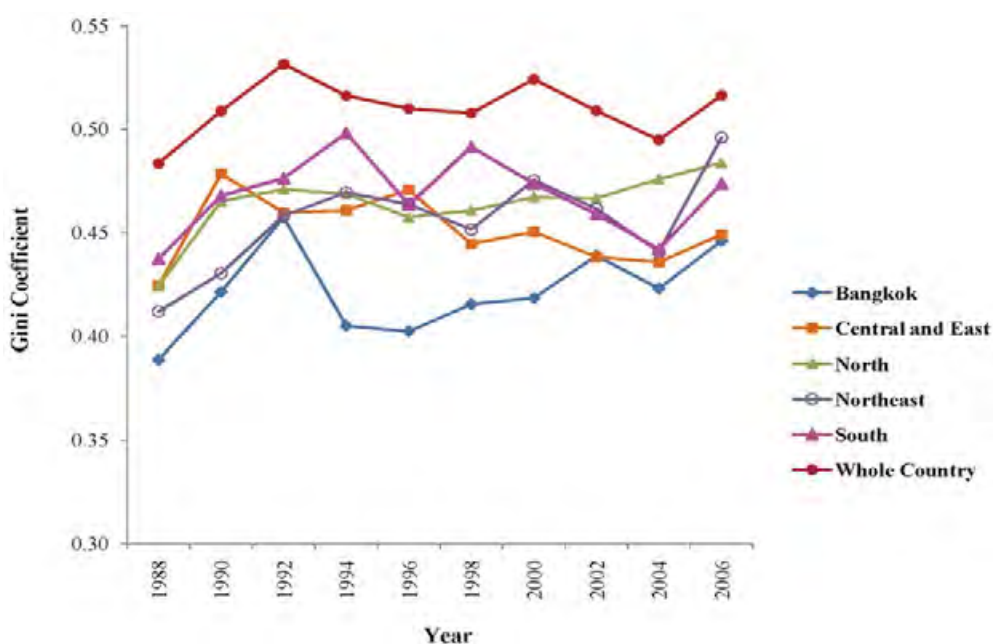


Table 2.5 Gini Coefficients of Thailand (Income Base)

Region	Area	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
Bangkok	Urban	0.3887	0.4214	0.4574	0.4050	0.4023	0.4155	0.4184	0.4389	0.4230	0.4460
	Rural	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
	Total	0.3887	0.4214	0.4574	0.4050	0.4023	0.4155	0.4184	0.4389	0.4230	0.4460
Central and East	Urban	0.4130	0.4587	0.4399	0.4443	0.4977	0.4300	0.4223	0.4310	0.4153	0.4323
	Rural	0.4194	0.4694	0.4289	0.4459	0.4153	0.4311	0.4488	0.4239	0.4330	0.4454
	Total	0.4245	0.4784	0.4598	0.4608	0.4707	0.4445	0.4505	0.4382	0.4357	0.4491
North	Urban	0.4682	0.5170	0.5042	0.4882	0.4825	0.5060	0.4751	0.4788	0.4877	0.4756
	Rural	0.4144	0.4212	0.4119	0.4362	0.4269	0.4242	0.4412	0.4388	0.4504	0.4646
	Total	0.4242	0.4653	0.4709	0.4687	0.4575	0.4608	0.4671	0.4667	0.4759	0.4837
NorthEast	Urban	0.4576	0.4870	0.5169	0.5259	0.5164	0.4967	0.5182	0.5057	0.4863	0.5065
	Rural	0.4006	0.3897	0.4166	0.4116	0.4156	0.4019	0.4258	0.4027	0.3891	0.4621
	Total	0.4119	0.4304	0.4583	0.4695	0.4638	0.4516	0.4754	0.4616	0.4407	0.4959
South	Urban	0.4421	0.4571	0.4839	0.4653	0.4769	0.4434	0.4535	0.4383	0.4519	0.4752
	Rural	0.4161	0.4469	0.4283	0.4817	0.4262	0.4810	0.4450	0.4396	0.4198	0.4602
	Total	0.4374	0.4679	0.4763	0.4982	0.4635	0.4915	0.4737	0.4591	0.4420	0.4738
Whole Country	Urban	0.4330	0.4763	0.4936	0.4729	0.4802	0.4657	0.4702	0.4732	0.4611	0.4778
	Rural	0.4204	0.4456	0.4398	0.4579	0.4370	0.4471	0.4643	0.4433	0.4414	0.4798
	Total	0.4835	0.5088	0.5315	0.5162	0.5100	0.5079	0.5242	0.5089	0.4949	0.5164

Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

Figure 2.5 Gini Coefficients (Income Base) by Region



Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

Let us first have a look at the Gini coefficients and their moves for the whole country. Over the 18 years from 1988 to 2006, the income-based Gini coefficient hovered around 0.5. The Gini coefficient for the rural area was lower than that for the urban area over the period except in 2006, indicating that income distribution is generally less equal in the urban area than in the rural area in all countries regardless of whether they are developed or developing countries. This is considered to be attributable to the fact that high-income group is concentrated in urban areas

and their presence, together with ordinary people and the poverty group, caused unequal income distribution in the urban areas.

Next, let us look at the trend in the income-based Gini coefficient for the whole country. It increased from 0.4808 to 0.5284 in four years from 1988 to 1992. The value marked in 1992, 0.5284, is the highest among all the income-based and expenditure-based coefficients throughout the survey period from 1988 to 2006.

A greater Gini coefficient (closer to 1) generally means less equal income distribution among the group concerned: that is, the growth in the coefficient over the four years suggests that the domestic income distribution became less equal in Thailand over the period. The analysis of the figure of income distribution in the previous section shows that it is in the period 1988-1992 that the percentage of low-income group drastically dropped from 46.82% to 30.07%. In this sense, Thailand must have successfully reduced poverty and achieved equal income distribution in this period.

These seemingly contradictory phenomena can be consistently explained if the expanded high-income group is taken into account. While low-income group shrank by 35.76%, the percentage of high-income group more than doubled from 5.6% to 12.66% over the period, the growth rate standing at 126.07%. The figures for income distribution at the macroeconomic level gives the impression that the country became less equal because high-income group expanded thanks to the economic growth even though income distribution became more equal due to a shrink in low-income group . As postulated in the Kuznets' Inversed U Hypothesis, a rise in the Gini coefficient was observed during 1988-92 in Thailand because of the gap between rich and poor which widened in the course of economic development.

The income-based Gini coefficient for the whole country, after reaching a peak in 1992, fell monotonously until 1998 with the currency crisis in between. The income distribution during the period showed the percentage of low-income group fell by 47.39% and that of high-income group increased by 54.42%. Because the magnitude of an increase in high-income group was not as large as the magnitude of a decrease in low-income group, compared to the situation before 1992, it is considered that income distribution became more equal across the country in this period.

The income-based Gini coefficient for the whole country turned upward again to 0.5193 in 2000 after the currency crisis. The percentage of low-income group that had been steadily falling increased by 16.94% in two years from 1998 to 2000, while the percentage of middle-income group fell by 4.84% over the same period. Due to the financial and economic crises triggered by the collapse of the Thai baht, a number of private companies went bankrupt and an increasing number of workers lost their jobs particularly in the urban areas. In such circumstances, the domestic income distribution became disproportionate and less equal.

From 2000 to 2004, thanks to the Thaksin administration's economic policies based on the "Dual Track Policy," the Thai economy recovered from the economic crisis and the domestic income distribution became more equal again: the income-based Gini coefficient for the whole country fell from 0.5242 to 0.4949. The figure of income distribution also proves more equal distribution: the

percentage of low-income group fell by 51.78% and those of middle- and high-income groups increased during this period.

Let us now have a look at the income-based Gini coefficients for the five regions. As seen in Figure 2.5, the Gini coefficients for the Bangkok metropolitan area had been the lowest in any year of the period observed. The income structure in urban areas, where low-income group is relatively small and middle- and higher-income groups account for the majority, reflects the low values of the coefficients. Among the other four regions, the income-based Gini coefficients were relatively high in the southern region. On the other hand, those for the northeastern region, the focus of this study, have the following characteristics: the Gini coefficient for the northeastern region had been relatively low until it grew to the level of the coefficients for the north and the central and eastern regions in 1994. It sharply increased immediately after the economic crisis, that is, from 1998 to 2000; started to fall steadily until 2004; and increased again the most sharply among the regions surveyed from 2004 to 2006.

One of the most conspicuous characteristics observed in the income-based Gini coefficients for the northeastern region is that the gap in the coefficients between the urban and rural areas is relatively large compared to other regions. The gap is attributable to a greater value of the urban Gini coefficient than those in the urban areas in other regions and a smaller value of the rural Gini coefficient than those in the rural areas in other regions. The Gini coefficient in the urban area of the northeastern region suggests that the urban area was not actually urbanized enough and industries producing income as value-added were established only partially, and that the manufacturing and service sectors, except agriculture, were not developed enough. The low value of the rural Gini coefficient explains that the profitability of agriculture in the rural area was lower than any other regions; that no industries other than agriculture were undeveloped; and thus that people as a whole were in poverty.

#### 2.4.2 Expenditure-Based Gini Coefficient

This section looks at expenditure-based Gini coefficients. This report defines an expenditure-based Gini coefficient as:

$$(2.2) \quad \text{Gini coefficient (expenditure)} = 1 - \sum_{i=1}^{20} \left\{ (\lambda_i - \lambda_{i-1}) \cdot (\eta_i - \eta_{i-1}) \right\}, \text{ where}$$

$\lambda$ : the share of accumulated number of households,

$\eta$ : the share of accumulated household income, and

$i$ : the household expenditure class value.

Table 2.6 lists time-series Gini coefficients in the same manner as Table 2.5 for the period 1988-2006 for five regions in Thailand: the Bangkok metropolitan, central and east, north, northeast and south. Each region is divided into urban and rural areas. The coefficients were calculated based

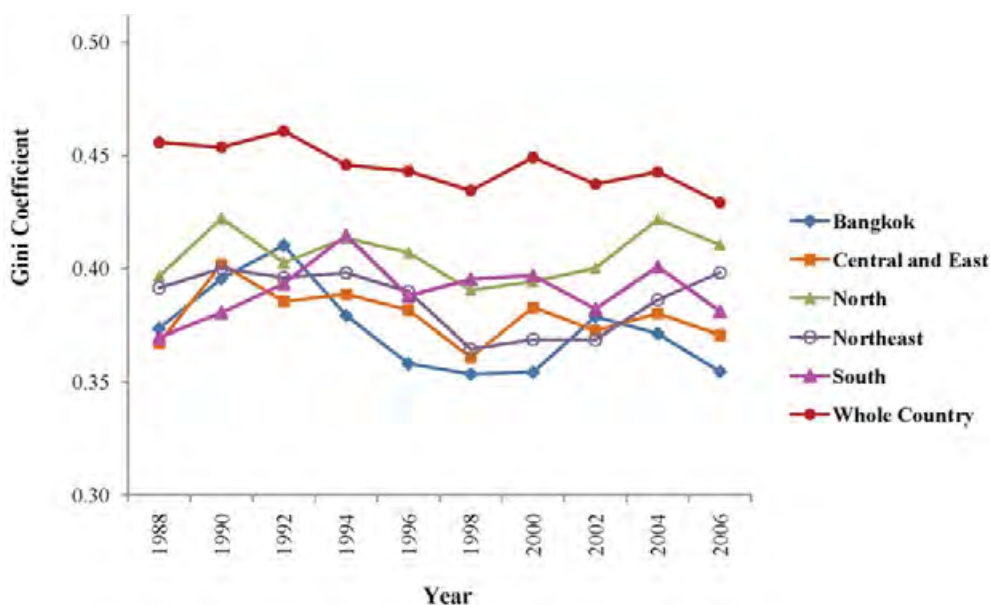
on expenditure data and thus hereinafter called “expenditure-based Gini coefficients.” Figure 2.6 shows the trends in the Gini coefficients of the five regions explained above and the whole country in line graphs.

Table 2.6 Gini Coefficients (Expenditure Base) by Region

Region	Area	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
Bangkok	Urban	0.3735	0.3955	0.4102	0.3792	0.3583	0.3534	0.3544	0.3787	0.3713	0.3546
	Rural	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
	Total	<b>0.3735</b>	<b>0.3955</b>	<b>0.4102</b>	<b>0.3792</b>	<b>0.3583</b>	<b>0.3534</b>	<b>0.3544</b>	<b>0.3787</b>	<b>0.3713</b>	<b>0.3546</b>
Central and East	Urban	0.3786	0.3763	0.3775	0.3717	0.3927	0.3586	0.3889	0.3737	0.3665	0.3600
	Rural	0.3598	0.4037	0.3569	0.3814	0.3500	0.3444	0.3562	0.3507	0.3750	0.3611
	Total	<b>0.3671</b>	<b>0.4019</b>	<b>0.3854</b>	<b>0.3886</b>	<b>0.3816</b>	<b>0.3609</b>	<b>0.3827</b>	<b>0.3725</b>	<b>0.3801</b>	<b>0.3707</b>
North	Urban	0.4229	0.4487	0.4163	0.4487	0.4238	0.4209	0.4173	0.4135	0.4285	0.4217
	Rural	0.3885	0.3926	0.3698	0.3815	0.3852	0.3673	0.3646	0.3728	0.4017	0.3851
	Total	<b>0.3965</b>	<b>0.4222</b>	<b>0.4026</b>	<b>0.4134</b>	<b>0.4070</b>	<b>0.3904</b>	<b>0.3942</b>	<b>0.4001</b>	<b>0.4217</b>	<b>0.4104</b>
NorthEast	Urban	0.4284	0.4402	0.4657	0.4483	0.4575	0.4186	0.4318	0.4163	0.4386	0.4332
	Rural	0.3814	0.3669	0.3592	0.3524	0.3471	0.3248	0.3236	0.3194	0.3398	0.3657
	Total	<b>0.3914</b>	<b>0.3999</b>	<b>0.3960</b>	<b>0.3981</b>	<b>0.3898</b>	<b>0.3645</b>	<b>0.3688</b>	<b>0.3687</b>	<b>0.3861</b>	<b>0.3981</b>
South	Urban	0.4020	0.4134	0.3967	0.4141	0.4300	0.3855	0.3856	0.3913	0.4028	0.4037
	Rural	0.3498	0.3469	0.3571	0.3934	0.3466	0.3731	0.3691	0.3543	0.3842	0.3551
	Total	<b>0.3696</b>	<b>0.3805</b>	<b>0.3933</b>	<b>0.4147</b>	<b>0.3879</b>	<b>0.3953</b>	<b>0.3969</b>	<b>0.3821</b>	<b>0.4008</b>	<b>0.3810</b>
Whole Country	Urban	0.4157	0.4295	0.4391	0.4239	0.4234	0.4046	0.4145	0.4118	0.4118	0.3987
	Rural	0.3899	0.3981	0.3765	0.3897	0.3728	0.3708	0.3748	0.3669	0.3940	0.3892
	Total	<b>0.4558</b>	<b>0.4536</b>	<b>0.4608</b>	<b>0.4458</b>	<b>0.4430</b>	<b>0.4345</b>	<b>0.4491</b>	<b>0.4373</b>	<b>0.4427</b>	<b>0.4291</b>

Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

Figure 2.6 Gini Coefficients (Expenditure Base) by Region



Source: Household Socioeconomics Survey (SES), National Statistic Office of Thailand (NSO), estimated by author

Let us first have a look at the Gini coefficients and their moves for the whole country. Over the 18 years from 1988 to 2006, the expenditure-based Gini coefficient hovered around 0.43 – 0.46.



With some fluctuations, it was constantly falling from 1998 to 2006. As for the coefficients for the urban and rural areas, the former was higher than the latter as a whole except 2000, 2004 and 2006.

Next, let us look at the trend in the expenditure-based Gini coefficient for the whole country. It fell from 0.4558 in 1988 to 0.4536 in 1990 and slightly increased to 0.4608 in 1992. The value marked in 1992 is the second highest among all the coefficients throughout the survey period<sup>8</sup>.

The figure above shows that the expenditure-based Gini coefficient for the whole country fell gradually for 10 years from 1988 to 1998, immediately after the currency crisis, except the period 1990-1992 when it slightly rose from 0.4536 to 0.4608. In expenditure distribution over the period, the percentage of the lowest 20% in expenditure fell from 47.98% in 1988 to less than one third, 14.89%, in 1996. The percentage of the highest 20% in expenditure, on the other hand, increased 2.7 times more from 7.75% in 1988 to 20.9% in 1996. Middle-expenditure group also expanded over the period. This suggests that the equality in respect of expenditures improved during the period, which is consistent with the move of the expenditure-based Gini coefficient.

From 1996 to 1998 with the year affected by the currency crisis in the middle, the percentages of high- and middle-expenditure groups fell, and the percentage of low-expenditure group increased to 16.17%. In terms of distribution, expenditures in Thailand as a whole became more equal in the two years in a sense that the percentage of low-expenditure group increased. In other words, the disparity in expenditure at the macroeconomic level was reduced due to the decreases in the percentages of high- and middle-expenditure groups. The values of expenditure-based Gini coefficients also support this trend: the expenditure-based Gini coefficient for the whole country fell from 0.4430 in 1996 to 0.4345 in 1998. As seen in Table 2.6 and Figure 2.6, the Gini coefficients for all the regions except the southern region fell over the period. Thus, it can be concluded that expenditure distribution in the whole country became more equal in the two years concerned.

It is somewhat ironic that the economy became more equal when it was hit by an economic crisis and saw a higher unemployment rate in urban areas. As seen in Table 2.3, expenditure distribution itself did in fact become more equal: the percentages of all the upper expenditure classes out of the 20 classes decreased except the second and third highest expenditure classes. In particular, the drop in the percentage of the highest-expenditure class from 5.52% to 4.84% appears to contribute substantially to the more equal distribution. The values of the Gini coefficients reflect the trend that consumption was heated by an economic bubble and then damped by the economic crisis.

## **2.5 Inversed U Curve in the Thai Economy**

The report has overviewed income distribution at the macroeconomic level in Thailand, using income distribution, expenditure distribution and Gini coefficients. It has found that Thailand's

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<sup>8</sup>The highest value of the expenditure-based Gini coefficient is 0.4657 recorded in 1992 in the urban area of the northeastern region.

economic growth accelerated since the end of the 1980s and, as a result, the poverty group shrank and high-income group increased. High- and middle-income groups continued to increase due to the growing bubble economy but started to decrease because of the currency crisis in July 1997 and the subsequent economic and financial crises. Despite this, Prime Minister Thaksin Shinawatra who came into office in 2001 launched various economic policies and revived the Thai economy. The policies carried out under his administration – widely known as the Dual Track Policy – revitalized Thailand's export-oriented economy and succeeded in job creation. Most notably, a series of policies under the Dual Track Policy, unlike economic policies taken until then, successfully vitalized the rural economies in the northern and northeastern regions and their income levels.

The debt moratorium for farmers, One Tambon One Product project, buyback scheme for agricultural products and other policies helped farmers earn higher agricultural incomes and contributed to an increase in income levels in villages. The establishment of “Opportunity Expansion Junior High Schools” helped more young people go to school in the rural areas in the northern and northeastern regions, and an increased number of young workers graduating from upper secondary schools started to work in the Bangkok metropolitan area, the Eastern Seaboard and elsewhere, and send money to families in their hometowns. The percentage of income transfer to all household incomes in the northeastern region particularly increased over the years, increasing household incomes in the region. However, the increase in incomes did widen the disparity of income distribution in the northeastern region, where most people used to be poor in general. In other words, the increase in incomes widened the gap between rich and poor, and reduced the proportion of the poverty group and expanded that of the wealth group, resulting in a rise in the relevant Gini coefficients.

The widened disparity in income distribution in recent years in the northeastern region seen in the deteriorated Gini coefficients resembles the deteriorated Gini coefficient for the whole country in several years after 1988. Increases in Gini coefficients give the impression that income distribution becomes less equal despite successful poverty reductions: poverty is reduced by the economic vitalization but hidden behind an expansion of the wealth group. Further development of the northeastern region will reduce low-income group while expanding middle-income group, and bring the Gini coefficients for the region down further in future.

The income-based Gini coefficient for the whole country increased sharply in four years from 0.4808 in 1988 to 0.5284 in 1992. After reaching a peak in 1992, it monotonously fell until 1988, the following year of the currency crisis. It started to rise again to 0.5193 in 2000 but exhibited a declining trend afterwards. To summarize the trend in the income-based Gini coefficient, Kuznets' Inversed U curve appears to be seen in the move of the coefficient between 1988 and 2004. In the Thai economy, the process where economic growth increased incomes, expanded the economic disparity and made income distribution less equal occurred between 1988 and 1992, and the process where income distribution became more equal occurred between 1992 and 2004. Increases in the Gini coefficient due to the currency and economic crises are absorbed in dummy variables.

The move of the Gini coefficient for the Thai economy after 1988 does in fact take an inverted U-shaped form. But it should be noted that one cannot conclude that the economic welfare deteriorated in the process when the Gini coefficient exhibited an upward trend. As in the process between 1988 and 1992, the absolute percentage of the poverty group to all the income classes did fall even when the Gini coefficient was increasing. The values of Gini coefficients increase even if poverty reductions are successful under the situation in which an expansion in high-income group is substantial enough to offset the poverty reductions. It is noteworthy that the Thai economy saw a constant decrease in the poverty group throughout the period when the Gini coefficient took an inverted U-shaped form. In other words, the Thai economy has demonstrated that numerical income disparity and inequality in income distribution do not necessarily mean an expansion in poverty or deterioration of economic welfare.

## Chapter 3 Trends in Poverty Indicators

### 3.1 Absolute Poverty Ratio and Relative Poverty Ratio

Poverty is a chronic social issue and one of the major issues that have to be resolved in the course of development of a country. The situation and degree of poverty vary by country and region. In order to understand the state of poverty and its various complex aspects, poverty itself first has to be defined accurately and then the degree and extent of poverty has to be quantitatively studied. To compare the state of poverty in different countries, the ratio of those in poverty in the country has to be measured. There is a concept of poverty head count ratio, as an economic statistic to measure poverty, and an indicator called poverty line is used for the calculation of poverty ratio. Poverty head count ratio is defined as the ratio of those below the poverty line to total population. There are two concepts of poverty ratio: “absolute poverty head count ratio” and “relative poverty head count ratio.”

Absolute poverty head count ratio is a poverty standard defined by the minimum needs criteria for food and non-food items. The absolute poverty head count ratio is the ratio of those below the absolute poverty line to total population. The concept of absolute head count poverty line was first defined in 1974 by the World Bank, who set the purpose of development as “meeting basic human needs.” The World Bank defined the income level required to get enough calories to maintain health as “food poverty line.” After adding the minimum non-food essential items such as housing and medicine, comprehensive poverty lines were defined for urban and rural areas. Then the ratio of those below the poverty line was defined as “absolute poverty head count ratio.”

On the other hand, the “relative poverty head count ratio” is a concept to show poverty, presented by the Organization for Economic Co-operation and Development (OECD). The relative poverty head count ratio is the ratio of the citizens whose equivalent disposable income (disposable household income divided by square root of the household size) is below 50% of the median equivalent disposable income of the total population. In short, when arranging all citizens in the order of income, the ratio of those below the line 50% of the median value is the relative poverty head count ratio. Now the 50% value of the median equivalent disposable income after adjustment of difference depending on the household size is defined as the “relative poverty line” and the ratio of those below the line is the relative poverty head count ratio.

The absolute poverty head count ratio is an indicator of the concrete poverty state calculated on the basis of purchasing power and shows the state where the minimum quality of life cannot be secured in terms of income level, health condition, education, etc.

On the other hand, the relative poverty head count ratio is a concept based on income disparity in the country rather than showing the concrete poverty state, and is considered to be an indicator of economic disparities in the country rather than of poverty. Therefore, the relative poverty head count ratio is comparatively high both in developing countries and advanced countries<sup>9</sup>.

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<sup>9</sup> On October 20<sup>th</sup> 2009 in Japan, the Ministry of Health, Labour and Welfare announced the relative poverty ratio for the first time at the instruction of then Minister of Health, Labour and Welfare, Nagatsuma. Japan’s relative poverty

### 3.2 Poverty Line in Thailand and its Revision

In Thailand, poverty lines and poverty head count ratios are used to measure poverty. There have been many discussions for many years concerning the definition of a poverty line, the calculation method and the data used. Several methods have been suggested for the calculation of a poverty line.

Measurement of poverty lines in Thailand is based on the concept of minimum material living standards, usually called “absolute approach.” In this concept, those who do not have enough consumer expenditures or income to satisfy minimum basic quantity of food and non-food items are considered to be in poverty. This means that the poverty line shows the minimum living standard in a society, and the poverty ratio in Thailand is not a relative poverty ratio but an absolute poverty ratio.

The first methodology for the calculation of the official poverty line in Thailand was studied and developed with a research grant from the Asian Development Bank and was first presented by Kakwani and Krongkeaw (1998). This public poverty line was considered as an absolute concept based on costs of basic necessities that were the sum of both food and non-food items. Thus the National Economic and Social Development Board (NESDB) disclosed the data of the poverty line, poverty ratio and population of the poor for the first time in Thailand.

The poverty line calculation method developed by Kakwani and Krongkeaw and presented to the public by NESDB was later criticized by many researchers. The major criticism was that the data used did not reflect the actual economic situation. Various data required for the calculation of the poverty line, especially food basket, price indices, and calories that could be purchased with a baht were based on the consumption pattern of 1992 and goods prices of 1992. The society and economy of Thailand significantly changed after 1992 with various policy measures carried out by the government. The national economy significantly changed, especially after the currency crisis in 1997 and the subsequent financial and economic crises. Despite this, consumption patterns and goods prices as of 1992 were still used for the estimation of poverty level after the crises. Therefore, many people criticized the traditional calculation method for not reflecting the changes over time in consumption behavior of individual households.

In response to such various criticisms, NESDB developed in 2004 a new method for poverty line calculation with technical cooperation of the United Nations Development Programme (UNDP) and the Thailand Development Research Institute (TDRI). As with the traditional one, this new poverty line is an absolute poverty line based on the cost of basic necessities shown in the sum of food and non-food items. This official poverty line was developed in reference to the consumption pattern of Thai people in 2002 and the population composition based on the population census of 2000.

Thanks to the remarkable economic growth after the economic crisis, the lifestyle, life mode, tastes and consumption pattern of Thai people changed dramatically. Especially the changes in about 10 years from 2002 till now are far greater than the changes before the economic crisis. The greater

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ratio of 2009 was 16.0% and, along with USA, Japan had a much higher ratio than 10.6%, the average of the OECD countries.

the change in consumption pattern is, the more the revision of poverty line is required to reflect the actual economic state. To reflect the social structure and the actual state of poverty in Thailand in an accurate and appropriate manner, NESDB and TDRI revised the poverty line measurement method once again and published it in 2012. The revised poverty line measurement method determines poverty lines based on the data from the Socio-Economic Survey (SES) 2011 and the latest population census of 2010.

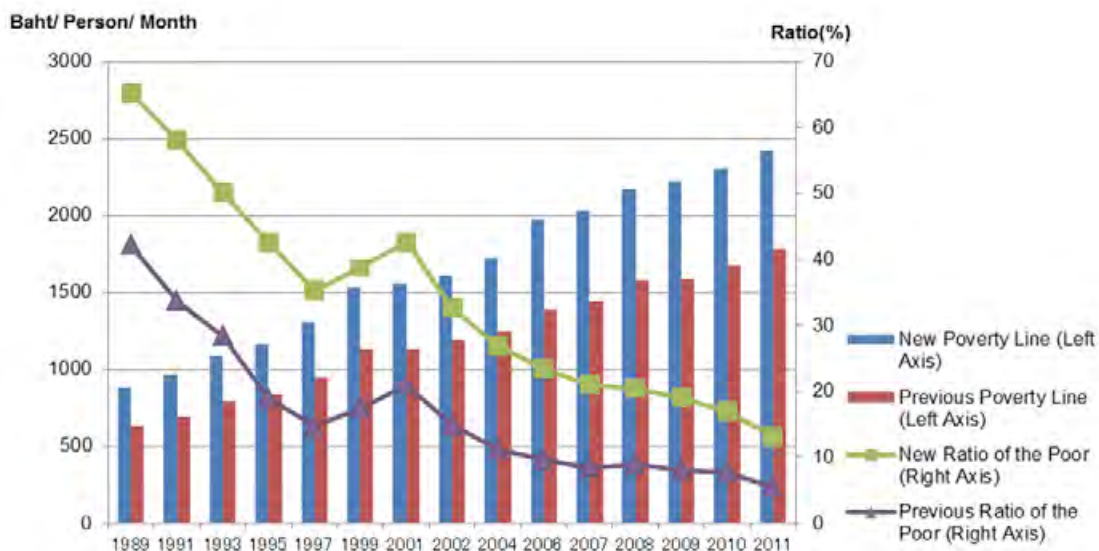
In the revised measurement method, the determination process of a food poverty line is similar to that in the previous method in that the nutritional calories required by a person to survive a day vary by age and sex, but the difference is that the new method uses the data of the food basket consumption patterns of the poorest decile (Decile 1, the poorest 10%) of “urban” areas and “rural” areas separately, while the previous method (2004 version) of food poverty line calculation used the data of food basket consumption pattern of the poorest quintile (Quintile 1, the poorest 20%). It is obvious that the consumption patterns of the poor can be comprehended more accurately with the poorest decile than the poorest quintile. Also, the economic disparity between urban areas and rural areas in Thailand has been shrinking but is still large. If there is large economic disparity between regions, there should be large difference in consumption patterns between those regions. The revised method is better than the previous one in that it uses separate consumption pattern data for urban areas and rural areas.

On the other hand, for the calculation of a non-food poverty line, the revised version still uses the non-food basket consumption expenditure pattern of a household group at the food poverty line called “food PL Ratio 90-110.” However, the revised version has a new characteristic that it has additional consumption samples of large cities, including Nonthaburi in the metropolitan area, Chonburi, Chiang Mai in the north, Phuket in the south and Trang also in the south, as well as the Bangkok metropolitan area. Items on which consumers no longer have to spend money or have been reducing spending for institutional or other reasons, such as hospital outpatient cost and school tuition, were excluded from the revised version.

With improvements in several aspects described above and calculation of the poverty line, poverty ratio and population of the poor in line with the actual economic situation, it was found that the state of poverty in Thailand is far from what was shown in the previous calculations. With the 2004 calculation method, the poverty ratio of the whole country of 1988, when foreign capital inflow increased, was 42.21%, lower than 50%. However, it is calculated as 65.26% with the new calculation method. Looking at the poverty ratio of 1996, the year before the currency crisis, it was calculated to be as low as 14.75% with the old method, but it is 38.72% with the revised measurement method. Also, the poverty ratio of 2011, which is 5.48% when calculated using the previous method, amounts to 13.15% when the revised method is applied. Thus there is a major difference in the poverty ratio calculated with the old 2004 method and the one calculated with the new 2012 method. Moreover, the more recent it is, the greater the difference becomes. The difference in poverty ratio of 2011 is more than double. The state of poverty in Thailand shown in a more accurate measurement calculation method is more serious than it was thought before, and it has

become obvious that the country cannot be optimistic about reaching the middle income country status.

Figure 3.1 Comparison of New (2011) and Old (2002) Poverty Lines and Ratios of the Poor



Source: Compiled by author with data from NESDB

### 3.3 State of Poverty in Thailand

Table 3.1 shows the changes in absolute poverty lines from 1988 to 2010 in five regions (Bangkok, central, northern, northeastern and southern regions) and in the whole country. Following the high economic growth that started in the late 1980s, the population of the poor in Thailand persistently decreased till the mid-1990s. The poverty ratio of the country dropped from 65.26% in 1988 to 35.31% in 1996. However, due to the currency crisis in 1997 and the economic and financial crisis induced by the currency crisis, both the poverty ratio and population of the poor increased till 2000. The poverty ratio rose from 35.31% in 1996 to 42.63% in 2000.

The economic crisis in Thailand was, in a manner, urban economic crisis that started in the financial sector. However, rural areas were affected more seriously than urban areas and that seems to have led to a significant increase in the poverty ratio and population of the poor at the national level. Rise in unemployment in the Bangkok metropolitan area encouraged labor movement from urban areas to rural areas and caused excess supply of labor in rural areas. There was especially a large excess of labor supply in the non-agricultural labor market, and it led to a decline in real wage. This made the poverty situation even more serious for the low-income class who depended on non-agricultural income for a living. Thus, it is a characteristic of Thailand that the economic mechanisms in urban areas and rural areas are closely linked and there is a mechanism where an unemployment issue that occurs in urban areas has a direct connection with the poverty issue in rural areas.

Thanks to the various economic policies generally called “Thaksinomics,” promoted by Prime Minister Thaksin, who took office in 2001 after the outbreak of the economic crisis, the poverty ratio and population of the poor have been continuously dropping since 2000. The poverty ratio of 2010 was 16.91% at the national level, which is below half of the 2000 ratio. The population of the poor also dropped from 11 million in 2010 to 8.8 million in the following year of 2011.

The class whose consumer expenditure is within the 20% above the poverty line is called the “quasi poor.” This class is as close as the poor and has a high risk of going back to the poverty state with such external incidents as a natural disaster and the economic crisis that started in 1997. In this regard, the poverty group and the quasi poverty group are in the state where it is difficult to escape from so-called “poverty trap.” Today the total population who belongs to these two groups is 16.4 million in Thailand. This corresponds to 24.7% of the total population of the country, which means one out of four Thai people belongs to either the poverty group or the quasi poverty group. This number suggests that poverty is still a serious social issue in Thailand even after the country became a category of middle income country.

Table 3.1 Absolute Poverty Line in Thailand (unit: Thai baht)

Region		1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010
Bangkok	Urban area	980	1,105	1,227	1,346	1,502	1,696	1,736	1,801	1,853	2,020	2,159	2,198
	Rural area	-	-	-	-	-	-	-	-	-	-	-	-
	Total	980	1,105	1,227	1,346	1,502	1,696	1,736	1,801	1,853	2,020	2,159	2,198
Central, Eastern and Western	Urban area	813	886	990	1,044	1,173	1,368	1,389	1,457	1,525	1,678	1,834	1,897
	Rural area	645	703	791	822	934	1,132	1,142	1,184	1,243	1,383	1,554	1,645
	Total	696	760	854	894	1,013	1,211	1,227	1,277	1,339	1,476	1,645	1,735
Northern	Urban area	708	762	860	913	1,023	1,178	1,199	1,252	1,294	1,425	1,590	1,679
	Rural area	578	623	705	729	835	984	974	1,032	1,089	1,227	1,437	1,542
	Total	604	652	737	767	874	1,023	1,019	1,078	1,131	1,266	1,468	1,579
Northeastern	Urban area	644	692	787	836	952	1,128	1,131	1,181	1,229	1,365	1,537	1,648
	Rural area	500	538	645	684	784	973	966	1,009	1,043	1,215	1,452	1,565
	Total	520	560	667	707	811	998	993	1,040	1,078	1,240	1,467	1,583
Southern	Urban area	684	748	837	903	1,029	1,197	1,201	1,265	1,313	1,448	1,605	1,706
	Rural area	560	618	694	745	860	986	985	1,041	1,116	1,304	1,496	1,594
	Total	584	644	724	778	897	1,033	1,034	1,096	1,164	1,340	1,525	1,627
Whole Country	Urban area	821	903	1,009	1,084	1,216	1,397	1,417	1,471	1,525	1,661	1,808	1,863
	Rural area	557	604	697	733	839	1,012	1,009	1,058	1,110	1,271	1,479	1,583
	Total	633	692	790	838	953	1,130	1,135	1,190	1,242	1,386	1,579	1,678

Source: Compiled by author with data from NESDB



Table 3.2 Poverty Ratio in Thailand (unit: %)

Region		1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2011	
														(Old standard)	(New standard)
Bangkok	Urban area (Total)	11.6*	11.9	4.39	4.11	1.21	1.23	1.71	2.24	0.78	0.51	0.76	0.64	-	-
Central, Eastern and Western	Urban area	29.80	22.54	19.8	9.04	5.42	4.72	7.04	5.01	3.26	3.94	1.66	1.6	-	-
	Rural area	36.5	27.94	21.84	12.17	6.48	9.36	10.07	9.97	5.1	3.94	3.77	3.51	-	-
	Total	34.49	26.12	18.31	11.15	6.13	7.8	9.03	7.63	4.47	3.21	3.09	2.83	-	-
Northern	Urban area	39.19	27.82	19.12	19.06	13.41	14.1	16.11	13.54	9.28	6.5	6.26	4.41	-	-
	Rural area	50.12	37.11	36.25	21.18	18.96	17.08	24.87	22.06	17.36	13.31	15.05	12.72	-	-
	Total	47.92	35.19	32.73	20.74	17.83	16.47	23.1	20.29	15.68	12	13.26	10.51	-	16.0
Northeastern	Urban area	32.4	31.14	24.59	15.42	14.98	17.16	20.07	11.93	10.81	8.61	8.8	9.33	-	-
	Rural area	60.6	48.65	44.06	30.39	26.32	33.25	38.36	25.6	20.35	18.46	16.55	15.54	-	-
	Total	56.67	46.09	41.04	28.07	24.54	30.67	35.34	23.06	18.58	16.77	14.62	13.11	-	18.1
Southern	Urban area	17.62	18.64	11.76	10.61	7.12	6.69	5.72	4.39	3.01	3.94	2.79	1.33	-	-
	Rural area	36.88	31.67	28.71	19.77	11.19	16.07	19.86	11.24	7.02	6	4.96	4.09	-	-
	Total	32.87	29.03	25.19	17.82	10.31	13.98	16.64	9.56	6.03	5.49	4.4	3.28	-	-
Whole Country	Urban area	23.7	20.46	12.11	9.88	6.84	7.14	8.63	6.43	4.64	3.62	2.96	2.57	-	9.0
	Rural area	49.69	39.2	35.33	22.87	18.19	21.99	26.49	18.93	14.22	12.04	11.54	10.41	-	16.7
	Total	42.21	35.69	28.43	18.98	14.75	17.46	20.98	14.93	11.16	9.55	8.95	7.75	5.48	-
Whole Country NEW METHOD	Total	65.26	58.08	50.09	42.63	35.31	38.72	42.63	32.64	26.88	23.43	20.49	16.91	-	13.13

Source: Compiled by author with data from NESDB

The major contributing factor to the poverty reduction that steadily progressed before the outbreak of economic crisis in 1997 was the economic growth brought about by export-driven industrialization with foreign capital. It was said that, during the period, 1% increase in GDP per capita reduced the population of the poor by 1.4%. However, while absolute poverty was alleviated, the regional disparity between urban areas and rural areas and the income disparity between the rich and the poor were not really corrected even in the period. This suggests that economic growth is not always a sufficient condition to alleviate disparity in the whole economy. In other words, before the outbreak of economic crisis, the economy of Thailand was under pressure to seek the course of stable economic growth that accompanies alleviation of income disparity brought about by poverty reduction and fair income distribution.

With the latest poverty line calculation in the revised method, the poverty ratio in the northeastern region is 18.1% as of 2011 and 3.4 million people are forced to live below the poverty line. 3.4 million accounts for 38.8% of the population of the poor in the whole country. In the northern region, the poverty ratio is 16% and 1.9 million people are below the poverty line. 1.9 million accounts for 21.1% of the population of the poor in the whole country. Thus these two regions have as much as 60% of the total poor population of the country. As of 2009, the population of the northeastern region and that of the northern region account for 33.8% and 18.5% of the country's total population, respectively. That means 52.3% of the total population in the country live in these two regions. On the other hand, the gross regional product (GRP) of the northeastern region and that of the northern region are 10.7% and 9.3% of the GDP respectively. The combined GRP of these two regions is as low as 20% of the GDP.

These two regions have wide rural areas and the numbers shows the reality that rural areas are

facing a serious poverty issue. In the whole country of Thailand, the poverty ratio of rural areas is 16.7% while that of urban areas is 9%, and it clearly shows how serious the poverty issue is in rural areas. Moreover, considering that many poor people in urban areas are migrant workers from rural areas including the two regions, it is not difficult to guess that the disparity between urban areas and rural areas is much larger than what numerical data shows.

As stated earlier, the various economic policies implemented under the Thaksin administration after 2001 were carried out with a focus on alleviation of regional disparity and income inequality<sup>10</sup>. With propriety on development and poverty reduction especially in rural areas, nine urgent economic and social policies were announced in February 2001. Some measures such as “debt moratorium for farmers,” “establishment of a village fund of 1 million baht per village” and “establishment of People’s Banks in rural areas to provide collateral-free loans” succeeded in directly creating access to liquidities in rural areas. The northeastern region, which has a large population in rural areas and a high percentage of agricultural workers, gained various benefits from these policy measures. Since then the poor population in the northeastern region has been monotonously decreasing to about 3.4 million across the region as of 2011.

Behind chronic poverty in the northeastern region, especially in rural areas, seems to be a complex web of several factors. One of such factors is about agricultural productivity and land ownership. Unlike other regions, in rural areas of the northeastern region, the rate of agricultural income is lower than non-agricultural income. This is considered as a big contributing factor to poverty in rural areas in the northeastern region. The major rice-producing areas in Thailand are northern, northeastern, central and southern regions. Among them, the northeastern region is the largest production area, accounting for 57% of the total planted area and 44% of the total production. The major producing areas of major types of rice including jasmine rice, which has high commercial value, are the five provinces of Ubon Rachathani, Nakhon Rachasima, Buriram, Surin and Roi Et. However, looking at the whole northeastern region, the agricultural productivity is far lower than in other regions<sup>11</sup>. The soil is damaged with salt and unfit for agricultural use because of the bedded salt under the Khorat Plateau, which lies in the middle of the northeastern region at 150-200 meters above sea level, and therefore the agricultural productivity stays low. As for rice production, there are other factors such as small average precipitation, underdeveloped irrigation facilities and other issues related to agricultural infrastructure<sup>12</sup>. There is also an issue of land ownership. This issue is not only for the northeastern region, but many people in the region owns only a small piece of land or do not own land at all. In Thailand, land ownership is extremely concentrated on a small number of people. According to the Ministry of Interior of Thailand, the number of people who own 100 rai (160,000 m<sup>2</sup>) or larger land is 4,613 in the whole country. In other words, 90% of the land in

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<sup>10</sup> As in the 8<sup>th</sup> National Economic and Social Development Plan (1997-2001), the 9<sup>th</sup> Plan (2002-2006) also mentioned alleviation of regional disparity as a priority issue and especially treated the poverty issue in rural areas as a major issue.

<sup>11</sup> While the average rice productivity in the northeastern region is 300-400 kg per rai (200-300 kg in some provinces), it is 500-600 kg per rai in the central region. 1 rai = 1,600 m<sup>2</sup>

<sup>12</sup> The annual average precipitation in the northeastern region is about 1,200 mm, smaller than in other regions. Precipitation amount fluctuates wildly and droughts and floods have been repeated.

Thailand is owned only by 10% of the national population. Many farmers in Thailand do not own land and, as of 2011, 1.2 million households are either tenant farmers or employed farmworkers.

Another big factor behind poverty in rural areas of the northeastern region is low education level. The number of years of education that heads of households in the poor class have received is much smaller than in other classes. Due to low education level, they cannot enter the formal labor market to get the legal minimum wage or more. Therefore, heads of poor households have to do farming work, or if they do non-agricultural work, they have to be in informal employment with low wage. They do not have opportunities for education because they are poor. They have to work at low wage because their education level is low. Their household income is small because their wage is low. They cannot give enough opportunities for education to their children because their income is low. Thus they cannot get out of this poverty spiral and it is a big contributing factor<sup>13</sup>.

Compared with other groups, there are a relatively high percentage of elderly, retired or disabled people among the heads of households in the poverty group. This is the issue of a flaw in the social security system rather than the issue of agricultural productivity or education level described earlier.

The programs for direct support to those in poverty carried out by the government from before the economic crisis included small loans for low-income households, transfer of income such as cash allowance for the elderly and low-income households, and provision of materials through health card system and feeding programs. To support the poor and unemployed affected by the economic crisis, many of the support programs of Thai government were strengthened with support from donors. Such new support from donors are classified into three programs – Social Investment Project (SIP), supported by the World Bank, the Asian Development Bank, the Japanese government, etc., Social Sector Program Loan (SSPL), supported by the Asian Development Bank, and Economic Recovery Social Sector Program Loan (ERSSPL), established with the support of the Japanese government.

### **3.4 Regional Disparity in Thailand**

In Thailand, regional disparity is an old and unignorable issue. Until very recently, urbanization has not been seen in any part of the country other than Bangkok metropolitan area. The country is dividable, though somewhat extremely, into the capital and the rest of the country which is rural areas. All the wealth is concentrated in Bangkok in the process of economic development, and the rest cannot benefit from the development (trickle down). Behind this lie various facts including the political shift to centralization made as part of the Chakri reforms conducted by Rama V, also known as King Chulalongkorn, who ascended the throne in 1868. As a result, authorities were centralized in the Bangkok metropolitan area and local autonomies had little administrative discretion and spirit to make best use of their comparative advantage to develop regional industries.

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<sup>13</sup> As described in the section of education system in Thailand, one of the large factors contributing to the low enrollment in secondary school (especially upper secondary school) was lack of secondary schools in rural areas. After 1990, with “opportunity expansion junior high-school” founded in many places in the northeastern region, the enrollment gradually increased.

When discussing regional disparity in Thailand, it is not appropriate to use per capita Gross Provincial Product (GPP) to envisage the actual income disparity among the provinces. The reason being that most of the GPPs in, for example, Rayong Province and Chonburi Province with the Eastern Seaboard where a sufficient amount of capital is accumulated are enterprises' share. On top of that, value-added-based GPP do not include transferred income such as remittance from other province or abroad. For comparison of actual incomes incorporating these factors, it is desirable to use data from household surveys. As of 2008, the average monthly household income was higher in Bangkok than in any other part of the country, and the lowest in Mae Hong Son Province, one of the northern provinces, the former being higher than the latter by 5.39 times<sup>14</sup>.

Tables 3.3 and 3.4 show 10 provinces having the highest and the lowest average monthly household income as of 2008, respectively. Provinces with high household income and expenditures were concentrated in the metropolitan area except for three southern provinces, whereas those with low household income and expenditures were all northern or northeastern provinces. Six provinces out of the ten provinces having the lowest average monthly income were northeastern, showing the seriousness of poverty in the northeastern provinces. The tables also show that the proportions of expenditures to the incomes in most of the provinces having high household income were lower than the national average, and those in most of the provinces having low household income were higher than the national average. This represents the fact that migrant workers in the capital and surrounding industrial areas as well as in foreign countries remitted part of their salaries to their families in the northern and northeastern provinces. The populations in the northeastern and northern provinces accounted for 33.84 and 18.53 percent of the total population in Thailand, respectively. The fact that they were relatively low-income areas means that more than a half of Thai people lived in regions with low income levels<sup>15</sup>. Thus, there was an obvious regional disparity between Bangkok metropolitan area of a high income level, and the northern and northeastern regions of low income levels<sup>16</sup>.

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<sup>14</sup> As Tables 3.3 and 3.4 shows, the average monthly household income in Bangkok was 39,020 baht, and that in Mae Hong Son Province was 7,245 baht.

<sup>15</sup> Rural workers normally migrate to the metropolitan area without bringing their registration records with them, so the actual population in the northern and northeastern regions is smaller than that officially recorded.

<sup>16</sup> Thailand's population as of 2009 totaled 63,525,062, of whom the populations in the northeastern and northern regions based on registration records were 21,495,825 and 11,770,233, respectively. (Source: Bureau of Registration Administration, Department of Local Administration, Ministry of Interior)

Table 3.3 Ten Province Having the Highest Average Monthly Household Income, 2008

(unit: baht/month)

Rank	Province	Average monthly		Expenditures as percentage of income
		Income	Expenditures	
1	Bangkok (Bangkok)	39,020	31,199	79.96
2	Nonthaburi (Vicinity)	32,743	28,329	86.52
3	Surat Thani (Southern)	26,207	20,983	80.07
4	Pathum Thani (Vicinity)	26,107	21,910	83.92
5	Nakhon Pathom (Vicinity)	25,447	17,890	70.30
6	Rayong (Eastern)	25,090	19,196	76.51
7	Phuket (Southern)	25,084	22,536	89.84
8	Trang (Southern)	23,650	18,632	78.78
9	Saraburi (Central)	22,363	15,783	70.58
10	Songkhla (Southern)	22,342	19,537	87.45
	Whole Kingdom	18,660	15,942	85.43

Source: Report of the 2009 Household Socio-Economic Survey, National Statistical Office,  
Ministry of Information and Communication Technology

Table 3.4 Ten Province Having the Lowest Average Monthly Household Income, 2008

(unit: baht/month)

Rank	Province	Average monthly		Expenditures as percentage of income
		Income	Expenditures	
1	Mae Hong Son (Northern)	7,245	5,917	81.67
2	Nakhon Phanom (Northeastern)	10,009	12,573	125.62
3	Yasothon (Northeastern)	10,040	10,429	103.87
4	Buri Ram (Northeastern)	10,263	10,727	104.52
5	Si Sa Ket (Northeastern)	10,782	8,679	80.50
6	Tak (Northern)	10,791	9,729	90.16
7	Chaiyaphum (Northeastern)	11,253	9,952	88.44
8	Phayao (Northern)	11,348	9,547	84.13
9	Nan (Northern)	11,407	10,841	95.04
10	Roi Et (Northeastern)	11,779	12,565	106.67
	Whole Kingdom	18,660	15,942	85.43

Source: Report of the 2009 Household Socio-Economic Survey, National Statistical Office,  
Ministry of Information and Communication Technology

Table 3.5 lists the average monthly household income in 2007 by region and source of income. Here, the country is divided into five regions, of which the average monthly household income was the lowest in the northeastern region, followed by the northern region. The gap in the average monthly household income between the Bangkok metropolitan area and the northeastern region was 2.69 times. The table shows two characteristics common to the northeastern and northern regions. First, the proportion of wage income to the total income was smaller than that in other regions, below 30 percent, whereas that in other regions was well above 30 percent. Second, the proportion

of transferred income was relatively higher. The proportion of transferred income in the northeastern region was particularly high, 16.5 percent, as of 2007. This suggests that employment opportunity giving salary income was scarcer in the northern and northeastern regions. Scarce employment opportunity within the regions led to a large number of migrant workers to the metropolitan and other areas with capital accumulation, and the large proportion of transferred income would support the presence of a large number of migrant workers.

Table 3.5 Average Monthly Household Income by Region

(unit: baht/month)

Source of income	Greater Bangkok <sup>2</sup>	Central	Northeastern	Northern	Southern	Whole Kingdom
Wages and salaries	18,326	8,301	3,872	4,067	6,635	7,445
Net profits from business	8,279	3,685	2,349	2,645	4,485	3,894
Net profits from farming	313	2,329	1,574	2,332	4,324	2,028
Property income	1,193	249	146	222	282	366
Current transfer	2,361	1,468	2,144	1,751	1,244	1,852
Non-financial income	4,041	2,615	2,536	2,202	2,423	2,712
Other money receipts	493	285	374	349	321	364
Total	35,007	18,932	12,995	13,568	19,716	18,660
Transfer as % of income	6.74	7.75	16.50	12.91	6.31	9.92
Wages and salaries as % of income	52.35	43.85	29.80	29.97	33.65	39.90

<sup>1</sup> Household income was the data of the past 12 months and averaged out in the household monthly income.

<sup>2</sup> Greater Bangkok includes Bangkok Metropolis, Nonthaburi, Pathum Thani and Samut Prakan.

Source: Report of the 2007 Household Socio-Economic Survey, National Statistical Office, Ministry of Information and Communication Technology

Table 3.6 shows a trend in the average monthly household income in the northeastern region, together with sources of income, in 1990-2007. The average monthly household income on a value basis increased steadily except in 1998-2000 when the country was suffering from the economic crisis triggered by the currency crisis. Two points are noteworthy: the first point is the proportion of wage income to the total income. In 1990-94, it was steadily increasing and hovered around 30 percent afterwards with no conspicuous growth. The second is the proportion of transferred income to the total income, which increased steadily except the period of 1996-98 when the economy was affected by the economic crisis.

These facts indicate that there was no growth in household income due to job creation in the northeastern region, but an increase in the amount of money transferred by migrant workers to the Bangkok metropolitan area, the Eastern Seaboard, Ayutthaya Province in the central region and other regions with capital accumulation backed up household income growth in the region. This is considered to be an evidence to show that the government policies to raise the minimum wage and make education up to upper secondary education free, as well as other measures, mutually enhance their effects and contribute to a reduction in regional income disparity between the northeastern region and the metropolitan area.

Table 3.6 Average Monthly Household Income in Northeastern Region

(unit: baht/month)

Source of income	1990	1992	1994	1996	1998	2000
Wages and salaries	871	1,219	1,741	2,279	2,498	2,369
Net-profits from business	351	600	858	1,158	1,372	1,157
Net-profits from farming	754	771	690	1,045	1,255	919
Property income	23	94	64	75	88	114
Current transfers 2	294	417	722	952	991	1,100
Non-financial income 3	1,169	1,337	1,443	1,703	2,131	1,945
Other money receipts	67	87	81	176	211	160
Total	3,529	4,525	5,599	7,388	8,546	7,765
Transfers as % of Total income	8.33	9.22	12.90	12.89	11.60	14.17
Wages and salaries as % of income	24.68	26.94	31.09	30.85	29.23	30.51

	2002	2004	2006	2007
Wages and salaries	2,852	3,165	3,573	3,872
Net-profits from business	1,543	1,557	2,270	2,349
Net-profits from farming	1,226	1,477	1,511	1,574
Property income	91	113	107	146
Current transfers 2	1,375	1,555	1,922	2,144
Non-financial income 3	1,962	2,066	2,241	2,536
Other money receipts	230	206	191	374
Total	9,279	10,139	11,815	12,995
Transfers as % of Total income	14.82	15.34	16.27	16.50
Wages and salaries as % of income	30.74	31.22	30.24	29.80

1 Household income was the data of the past 12 months and averaged out in the household monthly income

2 Including assistance payment, pensions and annuities, terminal pay

3 Including imputed rental value of owned dwelling

Source: Report of the 2007 Household Socio-Economic Survey, National Statistical Office, Ministry of Information and Communication Technology

### 3.5 Economic Policy and Reduction of Disparity under the Thaksin Administration

In the high economic growth period and the subsequent recovery from the economic crisis, however, alleviation of regional disparity was put on the back-burner: amidst the rapid economic growth as a result of adoption of foreign capital, the Sixth (1987-91) and Seventh (1992-96) Plans prioritized growth over social fairness. The Eighth Plan (1997-2001) promoted to bridge regional disparity but put regional development after recovery from the economic crisis which was the imminent top priority for the government.

As the traditional regional promotion policy to bridge regional disparity, Thailand adopted trickle-down economics to pass the wealth or income generated from intensively developed industries to other regions through decentralization of manufacturing. Prime Minister Thaksin Shinawatra taking power in 2001 launched unconventional disparity-adjustment policies, Dual Track Policies, simultaneously pursuing expansions of domestic demand and exports. The Ninth National

Economic and Social Development Plan (2002-06) under the Thaksin administration viewed rural poverty as a focal issue, emphasizing correction of disparity through strengthening the urban-rural or inter-regional economic relations, rather than focusing on growth pole development and decentralization of industries.

One of the policies' wheels was promotion of domestic demand, aiming to stimulate private consumption in rural areas through creation of effective demand and at the same time vitalize private investment in such areas through incubating grass-rooted industries. More specifically, the policy strived to foster niche industries using comparative advantages of rural areas in the northeastern and other regions. The other wheel of the policies was an expansion in demand from abroad, aiming to enhance an expansion in production with foreign capital and promotion of exports to gain more foreign currency. Thailand carefully specified leading industries such as the automobile and food-processing industries out of varied industries and injected capital into them to formulate industrial clusters. The country also promoted exports from the clusters by concluding a number of free trade agreements (FTAs) with foreign countries and expanding markets abroad, and aimed to secure stable export competitiveness. All these policies were expected to stabilize Thailand's balance of trade.

In February 2001, Prime Minister Thaksin announced "Nine Items of Emergency Economic and Social Policy," including a three-year debt moratorium for farmers on repayment of principal to the Bank for Agriculture and Agricultural Cooperatives (BAAC), installation of People's Banks in rural areas to provide collateral-free loans and creation of the 30 baht healthcare scheme. A series of these programs vitalized microfinance in rural areas, enabling farmers engaged in labor-intensive farming with water buffalos to purchase tractors and harvesting machines with loans and shift to capital-intensive farming. The government's buyback program for agricultural products stabilized agricultural income of farmers. An expansion in FDI (chiefly from Japan) created new jobs in the metropolitan and other industrial areas, where workers who used to have no choice but to engage in farm work became able to find regular employment in industrial estates after completing upper secondary education and send more money to their hometowns.

The most praised aspect of the set of these economic policies called Thaksinomics, together with an expansion in foreign direct investment, is that they enabled farmers in the northeastern and northern regions to have greater access to liquidity. Liquidities were supplied to farmers, so that they became able to send money to their families and secure loans at low interest rates through financial institutions. The Thaksin administration thought that liquidities would expand effective demand of farmers and rural areas as a whole, and that an expansion in effective demand would increase domestic demand and result in shrinkage in regional disparity. Thaksinomics differed from any traditional rural development program in that it directly stimulated rural areas through liquidities to simultaneously create demand for goods and supply for labor, rather than aiming at spillover effects of wealth through decentralization of manufacturing to rural areas.



## Chapter 4 Thailand’s Development Policies and Japan’s Economic Cooperation

### 4.1 Thailand’s National Economic and Social Development Plans and Trends in its Development Policies

#### 4.1.1 Pre-development Period (late 1950s to early 1960s)

At the mid-1950s, Thailand only had a traditional economic structure, or typical structure before “take-off”, meaning an urban-rural bipolar economy with the Bangkok metropolitan area being the center of country’s consumption and an expanse of traditional farming societies on the periphery of Bangkok, while the country had already established its standing as an independent state before World War II. In his thesis “Asian Drama<sup>17</sup>”, Karl Gunnar Myrdal, a Swedish economist, described how Asian nations were unable to break free from the poverty trap, focusing on India. Thailand was not an exception.

Since 1960, the government of Thailand has started to formulate development plans with regard to the promotion of public works. The government constructed social and economic infrastructure essential for the country’s economic takeoff, with the help of foreign fund, or financial aids provided by the World Bank and other international organs and under bilateral frameworks. Specifically, in 1961, it launched the First National Economic and Social Development Plan (for fiscal 1961 to 1966; hereinafter referred to as “NESDP”). It has since drawn up a NESDP every five years, despite several changes in its policies, and the plans have served as the backbone of the country’s economic and social development for more than half a century. The assistance from overseas flew into Thailand in a systemic manner based on these plans. The formulation of the plans is administratively supported by the National Economics and Social Development Board (NESDB.)

Burma (later Myanmar) has often been cited as a counterpoint of Thailand: in the 1950s, then Burma was considered more economically powerful and richer than its neighbor Thailand; however, it later fell into a prolonged standstill as it clung to an exclusive, socialistic economic system. On the contrary, Thailand implemented a series of economic policy measures from the end of the 1950s to beginning of the 1960s, paving the way for economic development. The difference between the two nations was to widen year by year.

The following table presents the histories of Thailand’s five-year NESDP and reins of government.

Table 4.1 Thailand’s National Economic and Social Development Plans and Heads of Government

NESDP and its target years	Government and its tenure
First Development Plan: FY1961-66	Sarit administration: 1959-1963
Second Development Plan: FY1967-71	Thanom administration: 1963-73
Third Development Plan: FY1972-76	Sanya administration: 1973-75

<sup>17</sup> Karl Gunnar Myrdal, “An approach to the Asian Drama: Methodological and Theoretical” (1974)

NESDP and its target years	Government and its tenure
	Kukrit administration: 1975-76 Seni administration: 1976
Fourth Development Plan: FY1977-81	Thanin administration: 1976-77 Kriangsak administration: 1977-80
Fifth Development Plan: FY1982-86	Prem administration: 1980-88
Sixth Development Plan: FY1987-91	Chatichai administration: 1988-91
Seventh Development Plan: FY1992-96	Anand administration: 1991-92 Suchinda administration: 1992 Anand administration: 1992 Chuan administration: 1992-95 Banharn administration: 1995-96
Eighth Development Plan: FY1997-01	Chavalit administration: 1996-97 Chuan administration: 1997-2001
Ninth Development Plan: FY2002-06	Thaksin administration: 2001-06
Tenth Development Plan: FY2007-11	Abhisit administration: 2008-11
Eleventh Development Plan: FY2012-16	Yingluck administration: 2011-present

Source: Compiled by author based mainly on JICA's Country Study for Japan's Official Development Assistance to the Kingdom of Thailand (March 2003).

#### 4.1.2 Development during the 1960s-1970s

The First NESDP addressed safety, social stability, fairness, rural development, and assistance to farmers as priority issues. As the Vietnam War intensified since 1960, Thailand fell under political and military tensions, particularly in its northeastern and eastern regions where the U.S. Forces deployed its frontline bases for the war. This fact needs to be taken into consideration when understanding the background of how the then Thai government identified the priority issues in its initial national plan. The Thai administration at that time was pressed for developing remote and rural areas to prevent these poor areas from communizing. That is why the U.S. provided assistance to construct trunk roads and raise farmers' income levels through new-village development projects in the northeastern region back then.

The Third NESDP (for fiscal 1972-76) aimed at alleviating regional disparity based on decentralization of manufacturing to various regions, in parallel with mitigating poverty in rural areas. It was the first plan that the government of Thailand advocated industrial decentralization. Yet, the industry continued to concentrate on the Bangkok metropolitan area at that time. The decentralization policy was to be put into effect a little later. Meanwhile, the Bangkok metropolitan area was beginning to face a wide range of urban problems, including traffic congestion, pollution and expansion of slums, along with its economic growth.

The Bank for Agriculture and Agricultural Cooperatives (BAAC) was founded in 1947, immediately following the end of World War II, as a cooperative association bank. It was later reorganized into the present form in 1966. It established the foundation for credit offering to farmers in rural areas nationwide, by receiving continued financial assistance, starting with Japan's first ODA loan project extended to the bank in 1975, until the 1990s. These rural policies primarily in 1975 may reflect the political situation at that time where the North Vietnam Communist Party unified the north and south Vietnams using military forces in 1975, and almost concurrently Laos and Cambodia turned communists.

#### **4.1.3 Development during the 1980s-1990s**

What kind of development policies supported the country in the 1980s? The Fifth NESDP, which showed the nation a path to economic reform, manifested the country's commitments to solving the poverty issue, bridging the gap between urban and rural areas, and pursuing income distribution remedy before economic growth. The then prime minister, Prem Tinsulanonda, put the plan into practice by building a structure with the National Rural Development Committee at the core, in collaboration with the NESDB, in the effort to develop the poor farm villages in rural areas in a comprehensive manner and relieve poverty. This top-down reform from the central government to farm villages, however, failed to function to the fullest only to weaken the execution system in the Sixth Plan period. The policies oriented to regional development and the administrative attempt to act as a coordination body are considered to have been passed on to the model of the 2000s and onward which pursues more grassroots-type rural development activities.

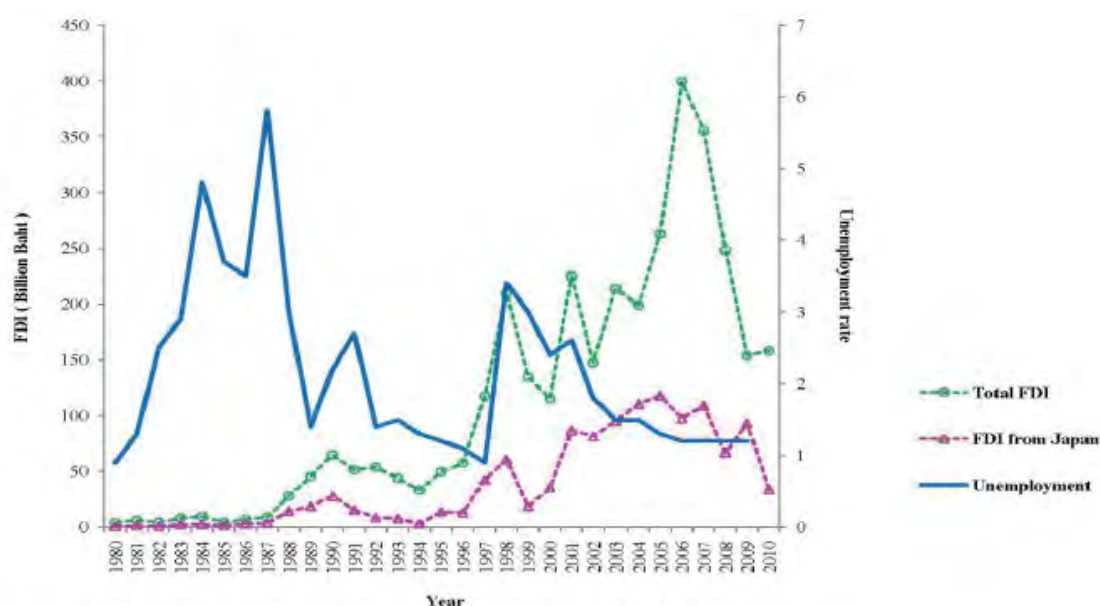
In sum, the government's poverty reduction policies targeting mainly at farm villages during the nation's high-growth period in the late 1980s to the mid-1990s, corresponding to the Sixth to Seventh NESDP periods, failed to serve as a consistent policy framework, as the government took a stance to prioritize economic growth over social justice.

The economic boom over about a decade starting in the late 1980s led the Thai economy close to joining other emerging economies, such as the Republic of Korea, Taiwan, Hong Kong and Singapore, in the second half of the 1990s. Such a growth period hit against a wall in 1997 when the Asian Currency Crisis was triggered by Thailand. The Thai government sought financial aid from the IMF, the World Bank and Japan again in order to ride out the crisis. International institutions and Japan responded quickly to provide relief to Thailand, by executing an emergency finance worth 17.2 billion dollars under the leadership of the IMF mainly using its Standby Credit Facility. The country also received funds from the World Bank and the Asian Development Bank and also ODA loan from Japan.

As in the case of the economic crisis in the early 1980s, the IMF provided conditionality for rectifying the macroeconomic structure at the time of the 1997 crisis. The three pillars were i) exchange rate stabilization, ii) fiscal restraining, and iii) tightening of the monetary policy. Based on the hindsight that the immaturity of the monetary system, in particular, caused the crisis, the country

pushed forward with financial and corporate system reforms, including the introduction of corporate governance in the two sectors, under the guidance of the IMF and the World Bank. While these emergency measures contributed to stabilizing the economy, the business climate further deteriorated due to consumption and investment plunges. In 1998, the unemployment rate went up to as high as three percent. To recover the economy, the government implemented incentives for private investment, allayed its fiscal restraint policy in part, and lifted a part of the freeze on public investment, in the attempt to create jobs and improve the income level of the people. As a result, unemployment gradually went down toward the 2000s.

Figure 4.1 Foreign Direct Investment (FDI) to Thailand and Unemployment Rate (1980-2000)



Source: FDI by Bank of Thailand (BOT) and Unemployment by World Bank

#### 4.1.4 Development during the 2000s

The government of Thailand traditionally depended on the trickle-down approach for alleviating regional disparity. The Thaksin Shinawatra administration born in 2001, however, made a departure from the tradition. It adopted a so-called “Dual Track Policy,” which aimed to directly alleviate urban-rural and inter-regional disparities with a focus on the rural poverty issue and concurrently enhance domestic demand and export. The Ninth NESDP (for fiscal 2002-2006), the backbone of the Dual Track Policy, sought for a different approach from the policies of growth pole development and industrial decentralization pursued up until then since the Third NESDP. It defined the first wheel as creation of effective demand through direct assistance to rural areas and the second as growth in industrial production and export by promoting direct foreign investment.

Of these wheels, the first was embodied in the nine urgent economic and social policies, announced in the policy statement of the new Thaksin administration in February 2001. Major items

are as follows.

<<Outline of Thaksin's major measures of direct support to farmers and agricultural communities>>

- 1) Provide a three-year debt moratorium for farmers on repayment to BAAC.
- 2) Install People's Banks in rural areas to provide low-interest loans.
- 3) Drive the One Tambon (village) One Product (OTOP) project.
- 4) Create a 30 baht healthcare scheme for farmers.
- 5) Promote grassroots small- and medium-sized industries in rural areas.
- 6) Implement the buyback scheme for agricultural products to stabilize farmers' income.

The series of these initiatives vitalized microfinance in rural areas, enabling farmers engaged in traditional labor-intensive farming with water buffalos to purchase agricultural machines and shift to capital-intensive farming.

Thanks to the policies espoused by the Thaksin administration, known as Thaksinomics, though the amount of FDI to Thailand had declined from 200 billion baht at the time of the economic crisis to some 100 billion baht after the crisis, it started to grow steadily right after the inauguration of the administration, and jumped to above 400 billion baht between 2004 and 2006. The direct investment from Japan during the period from 2001 to 2007 stayed at the level of 70-100 billion baht and was injected mainly in advanced heavy industries, such as automobiles and electronics. Japan's assistance thereby greatly helped the Thai economy grow rapidly in the mid-2000s. (Japanese companies built clusters of production factories covering the Bangkok metropolitan area, the Eastern Seaboard and also the north suburban area between Bangkok and Ayutthaya.)

The unemployment rate dropped from three percent in 1998, when the country was hit by the economic crisis in the midst of further industrialization, to almost one percent in 2006-2008, stepping forward to full employment.

The Thaksin administration ended in the midst of a political turmoil, which took place in the last years of his tenure. Consequently, investment from overseas sharply declined in 2010. Nevertheless, direct investment to Thailand revived later, as Japanese businesses looked offshore in response to the considerable yen appreciation following the 2008 global financial crisis and were seeking to relocate their investment in China where political risk had heightened. As a result, the unemployment rate in Thailand had gone below one percent by 2012. Incidentally, the large-scale flooding of Chao Phraya starting in the autumn of 2011 did not stop Japanese manufacturers from coming over to Thailand.)

## **4.2 Trends in Japan's Official Development Assistance to Thailand**

### **4.2.1 Japanese Assistance to Thailand to Date**

Japan's assistance to Thailand through its ODA schemes has a history of 40 years since the donor moved into high gear at the end of the 1960s. The period of about 25 years from the late 1970s

to the 1990s was the highlight of the assistance. Japan maintained its position as the largest donor to Thailand for most of this period. Among the East and Southeast Asian economies, the main target regions of Japan's ODA, Thailand's economic growth went into full swing at an early stage, following the Republic of Korea and Singapore. The assistance, therefore, focused on ODA loans, whereas grant aid and technical cooperation projects accounted for a relatively less portion in terms of the yen loans amount.

As described above, NESDP started with the first plan targeting at 1961-1966. Japan started providing full-fledged aid during the term of the second plan. Since then, Japan's ODA has been extended to the country keeping pace with and supporting NESDP.

The ensuing subsections briefly discuss how Japanese assistance to Thailand was implemented focusing on how it was provided for the purposes of supporting industrial development, which would directly and indirectly contribute to the increase of employment and alleviating regional disparity.

#### 4.2.2 ODA Loan

As shown in Table 4.2 below, the value of ODA loan commitments to Thailand drastically increased from the 1970s to the 1990s. Conspicuously, it peaked in the 1990s, during which approximately a half of the total amount committed for about the four decades up until fiscal year 2009 was approved.

Table 4.2 Trends in the Amount of New ODA Loan Commitments (Unit: million yen)

Fiscal year	Amount
1969-1979	175,704
1980-1989	579,318
1990-1999	1,027,964
2000-2009	352,948
1969-2009	2,135,934

Source: Compiled by the author based on JICA statistics

As it entered the 2000s, the commitment amount started to decrease to a large extent, because the Thai economy reached a self-supported growth stage, or became one of emerging economies, and the government of Thailand decided to put a cap on ODA loan borrowings. The cumulative amount of Yen loan commitments to Thailand reached roughly 1,783 billion yen with 226 projects by the end of the 1990s at the peak of lending. This was the 3<sup>rd</sup> largest amount of Yen loan extended, next to Indonesia and China.

#### **4.2.3 Trends in ODA Loan's Target Sectors (See Supplement for individual projects.)**

The trends in ODA loan projects from the 1970s to the 2000s may be analyzed by decade and sector as follows:

1970s: Since the economic infrastructure was the bottleneck for economic growth, power generation (mainly hydropower) and road construction were the two major sectors for Japanese ODA loan. The total amount of ODA commitments made in these sectors accounted for 58 percent of all commitments made during this period. In addition, agricultural credit assistance to the BAAC started in fiscal year 1975 and continued for more than 20 years until the second half of the 1990s. The 1970s were when the Vietnam War was brought to an end and the whole Indochina region had been communized. In response, increased assistance in rural development was extended to Thailand, particularly in the northeastern and northern regions which share borders with that area.

1980s: Assistance in developing the economic infrastructure maintained a large portion. At a lower level, the transport and communications sectors gradually took over the power sector. The decade saw new development needs as the Thai economy had achieved a certain level of economic growth in the preceding decade. For this, assistance became more thematic in each assistance field.

1990s: Assistance was boosted to cover social infrastructure development, environmental protection and alleviation of regional disparity, in addition to economic infrastructure development. Japan incorporated the social sector in the scope of its loan assistance to Thailand partly because Thailand became a middle-income country, graduating from being a general grant aid recipient (FY93), and the social sector, subject to grant aid assistance, had to be looked after under the ODA loan scheme. Additionally, in 1997, Japan provided a local cost financing loan for existing projects (FY98), an economic recovery and social sector program loan (FY99), an agricultural sector loan (FY99), and so forth. It is noteworthy that Japan led the way to revamp the macro-economy of Thailand based on a massive injection of foreign fund.

2000s: The Thaksin administration formed during this decade changed gears from being an aid recipient to becoming a donor country, with the aim of becoming a middle-income country. As a result, the Yen loan requests from the Thai government were limited to specific ones that were instrumental to further economic sophistication. This called for putting an end to the time when a single donor exclusively provided assistance in a wide spectrum of sectors. The projects carried out during this decade focused on functional upgrading of the infrastructure of the Bangkok metropolitan area, ranging from subway construction project to the construction of a second international airport and the water supply services in the city. (At the same time, however, all these projects were continued assistance from the 1990s.) In relation to regional economic development, Japan extended assistance to projects leading to the development of the Greater Mekong Subregion, such as the construction of the Second Mekong International Bridge, and those improving regional trunk roads.

#### **4.2.4 Grant Aid Assistance (See Supplement for individual projects.)**

For a developing country, Thailand had a relatively high income level from the outset. Thus, the share of grant aid assistance in the total Japanese ODA to Thailand was small. The first grant aid assistance to Thailand was provided in 1970, two years later than the start of ODA loan to the country. Although many projects were implemented across a broad range of sectors in the 1970s-1980s, the provision of general grant aid, the core of the grant aid scheme, was terminated in fiscal year 1993, as Thailand ranked middle income countries.

The cumulative amount of grant aid assistance up until fiscal year 2009 was 160.4 billion yen, equivalent to merely 9.0% of 1,783 billion yen, the cumulative amount of ODA loans committed up to the same year. The following table tracks the trends in the provision of grant aid assistance in recent years. The high committed amount in fiscal 1998 resulted from non-project grant aid assistance provided in response to the economic crisis.

The sectors receiving grant aid assistance greatly ranged from agriculture (e.g., agricultural development and training centers, irrigation and drainage facilities, coastal fish farming) to education (e.g., provision of educational equipment to universities, construction of vocational training centers), healthcare (e.g., construction of hospitals and nursing schools), water supply, roads and bridges, and regional development. The grant aid focused more on the social and regional development, whereas ODA loans were concentrated on development of larger economic infrastructure with focus on the Bangkok metropolitan area. In this sense, it put an emphasis on assisting the low-income population and bridging urban-regional disparity rather than economic development.

In addition, one of the characteristics of these grant-aid projects was that many of them were carried out as tie-ups with the same projects implemented under the technical cooperation scheme (formerly known as project-type technical cooperation.)

Additionally, grassroots grant aid has been provided in an amount of 100 to 200 million yen (for 20 or so projects) per year since around the 1990s. The grassroots grant aid scheme was renamed as the Grant Aid for Grassroots Human Security Projects in fiscal year 2003. The first assistance under the scheme of grant aid for Japanese NGOs' projects was provided in the next year (50-100 million yen per year since then). The Project for Construction of the Asia-Pacific Development Center on Disability and some others in fiscal 2004 were the last grant aid assistance to Thailand provided on the project basis. Since fiscal 2005, Japanese grant aid to Thailand has been limited to grassroots projects and NGOs' projects.



Table 4.3 Trends in Recent Grant Aid Assistance to Thailand (Unit: million yen)

Fiscal year	Committed amount
1996	256
1997	287
1998	2,259
1999	207
2000	248
2001	316
2002	354
2003	431
2004	501
2005	236
2006	161
2007	179
2008	257
2009	832

Note: The committed amounts given above are based on the Exchange of Notes (E/N).

Source: Official Development Assistance Country Databook, the Ministry of Foreign Affairs of Japan

#### 4.2.5 Technical Cooperation (See Supplement for individual projects.)

Japan's technical cooperation assistance to Thailand started in 1954 when Japan conducted training of Thai officials in Japan. (This marks the beginning of Japanese ODA to Thailand.) Since then, assistance under the scheme has been provided as standalone projects or in tie-up with grant-aid or ODA-loan projects.

The technical cooperation scheme is comprised of the technical cooperation projects, technical cooperation for development planning, acceptance of training participants, dispatch of experts, dispatch of missions, provision of equipment, and dispatch of volunteers, such as Japan Overseas Cooperation Volunteers (JOCVs) and Senior Volunteers (SV). So far as of the end of fiscal year 2009, 28,569 trainees had come to Japan for training, while JICA had sent 8,388 experts, 13,641 mission members and 866 volunteers, and provided equipment worth 39.1 billion yen. The annual amounts of assistance provided under the scheme totaled 209.9 billion yen up to fiscal 2009, exceeding the total of grant aid assistance. Technical cooperation to Thailand is characterized by many technical cooperation projects combining equipment supply with technical cooperation, such as the dispatch of experts and acceptance of training participants. These projects are also closely related to construction projects of research institutes and training facilities provided under the grant aid scheme, and this type of collaboration plays a key role in projects in Thailand. Noticeably, in the meantime, more and more projects implemented in recent years concern wider-area cooperation, at such levels as ASEAN

and Mekong, as opposed to conventional projects that focused solely on rural development within the borders of Thailand.

#### **4.2.6 Thailand's Development Plans and Changes in Target Sectors of Japanese ODA**

Figure 4.2 below summarizes changes in Japan's ODA to Thailand, centering on ODA loan, in comparison with Thailand's economic growth over about three decades from the end of the 1960s to the end of the 1990s.

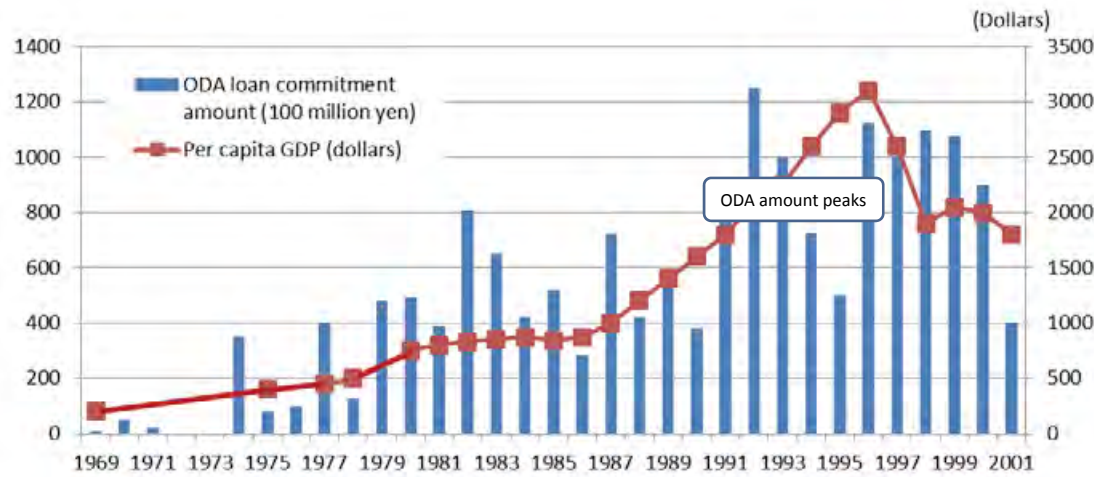
Thailand's GDP per capita grew steadily from the 1970s to the mid-1990s, despite the economic crisis along the path. The growth in the mid-1980s was particularly notable: the GNP per capita reached the 3,000-dollar level just before Asia encountered with the currency crisis in 1997. It declined to the 2,000-dollar level in the aftermath. Nevertheless, the country got back on the track of accelerated growth during the Thaksin administration term through drastic economic reforms, as discussed above.

In terms of the amount of ODA loan, Japanese assistance gradually increased from 10 billion yen per year in the mid-1970s to 50 billion. It fluctuated in the range of 40-70 billion yen per year in the succeeding years of the economic crisis in the early 1980s. It started to increase again in the high-growth period between the late 1980s to the mid-1990s. The annual commitment amount once reached its peak with the 100 billion lines in fiscal 1992-1993. After it peaked out, the economic crisis in the late 1990s again made it rise by attracting assistance fund and reach 140-150 billion yen in fiscal 1998-1999, marking the highest ODA commitment value for Thailand as the emergency assistance was concluded in 1990s. Thereafter, ODA loans were focused on large-scale infrastructure development in the Bangkok metropolitan area (Bangkok subway, Bangkok water supply, New Bangkok International Airport, etc.), as described previously, in the range of 6 to 90 billion yen per year. (The commitment value greatly varied from year to year depending on the scale of funding needs of projects.) Incidentally, there was no approved project in some years, such as 2003 and 2006.

Technical cooperation has constantly been provided at large since the 1950s in the forms of development studies to technical cooperation projects and training in Japan. The coordination between ODA loans and technical cooperation projects may not have been sufficient at the outset, but, broadly speaking, the ODA loan, grant aid and technical cooperation schemes have contributed to Thailand's economic and social development in a scrum. In particular, assistance in the Eastern Seaboard Development Program, agricultural credit to BAAC, and rural infrastructure development has yielded outstanding outcomes, both directly and indirectly, in terms of alleviation of regional disparity.

Grant aid assistance was provided in diverse spheres, centering on social and regional development, in the 1970-1980s. In the first half of the 1990s, however, the provision of general grant aid was discontinued, ahead of ODA loan, and the amount of grant aid provided was soon to plunge. The grant aid assistance to Thailand has been focused on grassroots cooperation since the latter half of the 2000s.

Figure 4.2 Amount of Japan's ODA Loan Commitments to Thailand and Thailand's GDP Per Capita (1970s-1990s)



Period	First (1970s)	Second (1979 to mid-80s)	Third (late 1980s to late 1990s)	Fourth (End of 1990s to early 2000s)
Economic profile	Import substitution industrialization	Economic crisis, structural reform	Export-oriented industrialization High economic growth	Asian Financial Crisis, second structural reform →To Thaksinomics
ODA profile	[Start of full-fledged assistance] <ul style="list-style-type: none"> <li>• 1969 Commitment of the first ODA loan project</li> <li>• Assistance in key infrastructure development, including power, communications, and road and bridge construction</li> <li>• 1975 Start of agricultural assistance to BAAC</li> </ul>	[Strategic expansion] <ul style="list-style-type: none"> <li>• Eastern Seaboard Assistance in industrial park formation</li> <li>• Regional and rural infrastructure Full-scale assistance</li> <li>• Continued assistance in agricultural credit to BAAC</li> </ul>	[Qualitative transformation] <ul style="list-style-type: none"> <li>• Reinforced political assistance</li> <li>• Emphases on education, healthcare and environmental protection</li> <li>• Continued assistance in infrastructure development in the Eastern Seaboard</li> <li>• BAAC loan scheme changed from ODA loan to rural development programs</li> <li>• Start of south-south cooperation</li> <li>• Grant-aid assistance Reduced as the nation became a middle income country.</li> </ul>	[Response to the economic crisis and economic reform] <ul style="list-style-type: none"> <li>• Assistance to deal with the economic crisis and economic transformation (with consideration given to alleviation of regional poverty and employment generation)</li> <li>• Since the 2000s, economic growth accelerates again. The country becomes an emerging economy. →Decline in ODA loan</li> </ul>

Source: Compiled by author based mainly on JICA statistics and World Bank data

### **4.3 Formation of Industrial Estates in Thailand and Development of the Eastern Seaboard**

#### **4.3.1 Decentralization of Industries from the Bangkok Metropolitan Area and Movement toward the Creation of the Eastern Seaboard**

Thailand's industrialization set out with light industries in the 1960s when Japanese and other foreign-funded enterprises made inroads to Bangkok and its surrounding areas. If you were to drive from Don Muang Airport to the downtown of Bangkok in the latter half of the 1960s, you would have seen houses and factories being constructed against the backdrop of extensive pastoral scenes on both sides of the road. Also seen would have been billboards advertising Japanese large companies on the roadsides.

The industrialization of Thailand became more serious in the 1970s. This represents that the Thai government's policy measures to promote attraction of foreign capital and the import substitution industrialization based on a shift to the market-based economy had been achieved to a certain extent. (There are several factors behind the success: in the early 1970s, the first phase of yen appreciation occurred as Japan introduced the fluctuating exchange rate system; consequently, Japanese corporations intended to relocate their production bases to Southeast Asia; and the unification of Vietnam by North Vietnam and the communization of Laos and Cambodia heightened the importance of Thailand to Western countries.) The industrialization in this period still concentrated in Bangkok and its surrounding areas, creating new urban issues in the metropolis, including traffic congestion, pollution and land price hikes. That being the case, the NESDP pulled together at that time (the Third Plan starting in 1971) was the first that the Thai government advocated dispersion of industries to rural areas, as explained in Section 4.1 hereof.

As commercially-viable natural gas fields were discovered in the Gulf of Siam in the 1970s (1973 and 1977), the eastern seaboard region, situated close to the gas fields, suddenly caught attention, expected to serve dual purposes of easing the over-congestion in the Bangkok metropolitan area and ameliorating the energy situation in Thailand. The region extends 80 to 200 kilometers southeast of Bangkok (stretching across Chachoengsao, Chonburi and Rayong Provinces.) The proximity to the metropolitan area and direct access to the ocean, which allows large vessels to berth unlike the river port of Bangkok (Klong Toei), made the region advantageous. The Thai government contrived to develop a second industrial zone, after the Bangkok metropolitan area, in this region in the second half of the 1970s. More concretely, the Eastern Seaboard concept consisted of three districts: the Map Ta Phut area, which entices heavy chemical companies based on natural gas, the Laem Chabang area, which hosts export-oriented labor-intensive industries, and the Pattaya area, which promotes tourism. To push forward with this Development Plan, the Thai government drew up a master plan with the aid of the World Bank and the United Kingdom. The results were compiled in 1982. Unfortunately, however, the Thai economy fell in an balance of payments deficit and a debt crisis, and thus had to receive structural adjustment loans (SALs) from the World Bank in 1982 and 1983. The execution of the Eastern Seaboard Development Plan in the first half of the 1980s, therefore, was subjected to criticisms calling it "excessive investment." (The World Bank

recommended downscaling of the original plan.)

In 1985, notwithstanding the economic difficulty, the Thai government decided to implement the plan as more or less originally intended, except some projects that were abandoned, such as the construction of a fertilizer production plant. The government made a substantial stride toward the realization of the Eastern Seaboard Development Plan. In the meantime, Thailand's economic climate turned for the better, owing to a succession of events: the structural adjustment plan was in the process of progress and the drastic yen appreciation stemming from the Plaza Accord in 1985 encouraged Japanese companies to enter the Thai market. These served as tailwinds to the formation of the Eastern Seaboard. Furthermore, Japan aided thoroughly in the materialization of the plan.

#### **4.3.2 Development of the Eastern Seaboard**

The Eastern Seaboard Development Plan was formulated under the Fifth Five-Year Development Plan beginning in 1982. Such a plan cannot be realized just by the capacity of the private sector alone and inevitably requires the full engagement of the central government in infrastructure development. The development needs in association with the Eastern Seaboard Development Program included the building of new industrial estates and ports, exploitation of new water resources, installation of water supply pipes for industrial water, and construction of railways and roads. A majority of the fund needed for these development projects relied on foreign aid, particularly Japan's ODA loan assistance. The following 16 projects and a development plan constituted the core of infrastructure development for the Eastern Seaboard.

- (i) Development of the Map Ta Phut area
  - Mat Ta Phut Industrial / Urban Complex Project: Committed in fiscal 1985 with an amount of 3.2 billion yen
  - Map Ta Phut Port Project: Committed in fiscal 1984, 1985 and 1991 with an amount of 25.1 billion yen in total
  - Gas Separation Plant Project: Committed in fiscal 1982 with an amount of 15 billion yen
- (ii) Development of the Laem Chabang area
  - Laem Chabang Port Project: 1984, 1986 and 1989 with an amount of 22.9 billion yen in total
  - Laem Chabang Industrial Estate Project: 1985 and 1987 with an amount of 5.9 billion yen in total
- (iii) Water Resource Development/ Water Pipeline Projects
  - Nong Pla Lai Reservoir Project: Committed in fiscal 1988 with an amount of 4.4 billion yen
  - East Coast (Dok Krai-Map Ta Phut) Water Pipeline Project: Committed in fiscal 1982 with an amount of 6.6 billion yen
  - Map Ta Phut-Sattahip Water Pipeline Project: Committed in fiscal 1988 with an amount of 1.5 billion yen
  - Nong Kho-Laem Chabang Water Pipeline Project: Committed in fiscal 1984 and 1985 with

- an amount of 1.5 billion yen in total
- Nong Pla Lai-Nong Kho Water Pipeline Project: Committed in fiscal 1990 and 1993 with an amount of 66 billion yen in total
- (iv) Railway Projects
  - Si Racha-Laem Chabang Railway Project: Committed in fiscal 1988 with an amount of 1 billion yen
  - Sattahip-Map Ta Phut Railway Project: Committed in fiscal 1988 with an amount of 3 billion yen
  - Klong Sip Kao - Kaeng Khoi Railway Project: Committed in fiscal 1989 with an amount of 8.2 billion yen
- (v) Road Projects
  - Chonburi-Pattaya New Highway Construction Project: Committed in fiscal 1988 and 1991 with an amount of 9.8 billion yen in total
  - Bangkok-Chonburi Highway Construction Project: 1990 and 1993 with an amount of 37.1 billion yen in total
  - Outer Bangkok Ring Road (East Portion) Construction Project: Committed in fiscal 1990 and 1993 with an amount of 25.4 billion yen in total
- (vi) Formulation of Development Plans
  - Eastern Seaboard Development Program: Committed in fiscal 1982 with an amount of 1.7 billion yen

Figure 4.3 Location of ODA Loan Projects in Relation to the Eastern Seaboard Development Program



Source: An excerpt from the Eastern Seaboard Development Program Impact Evaluation

As shown above, the approval on ODA loans for the Eastern Seaboard Development Program

started in 1982 and continued for 10 plus years until fiscal year 1993, with the peak year being around 1988. The cumulative committed loans counted 27 and amounted to 178.9 billion yen. The entire construction works continued until the end of the 1990s, that is, for the terms of the Fifth National Development Plan to a part of the Eighth Plan. The cumulative loan amount during this time period (1982-2000) was nearly one tenth of the total amount of Japanese ODA loans to Thailand during the same period.

Incidentally, in addition to the above, as mentioned in supplement regarding Japan's ODA assistance to the northeastern region of Thailand, an ODA loan project for strengthening vocational training colleges was approved in fiscal 1994 and carried out. Of the 20 vocational training colleges covered by the project distributed across Thailand, the four colleges located in the Eastern Seaboard, namely Sattahip, Rayong, Chanthaburi and Trat, received assistance in the fields of production engineering, petrochemistry, electronics and electricity.

#### **4.3.3 Effects of the Eastern Seaboard Development Program**

As a result of implementing the Eastern Seaboard Development Program, the Thai government successfully accomplished its strategy to create a second industrial zone following the Bangkok metropolitan area. It established the foundation for shifting its industry from the light level to the heavy level pillared by the automobile and petrochemical industries. On the side of Japan, the Program marks an important milestone, in the history of its assistance to developing countries, as a representative assistance project to support a regional development plan. The Eastern Seaboard hosts not only the two industrial estates in which Japan assisted through ODA loan, Map Ta Phut Industrial Estate (completed in 1988) and Laem Chabang Industrial Estate (completed in 1991) but many others, including Chonburi Industrial Estate (completed in 1991), Eastern Seaboard Industrial Estate (completed in 1994), Rayong Industrial Park (completed in 1995), Amata City Industrial Estate (completed in 1996), Hemaraj Eastern Industrial Estate, and Rojana Industrial Park. It is home to foreign companies, particularly Japanese companies, setting foot in Thailand.

On the other hand, since the completion of the Laem Chabang Port, the Ports of Bangkok and Laem Chabang have been supplementing each other, which allowed a large number of factories to cluster also along the coast of the Gulf of Siam between Bangkok and the Eastern Seaboard. Furthermore, the operations of the industrial estates in this region created a massive number of jobs, inducing an inflow of enormous labor from other regions. In the city of Laem Chabang alone, the population grew at an annual rate of five percent from 1993 to 1998, reaching 40,000 in 1998. The number of those who were not registered as local citizens was also reported as another 40,000. Currently, Amata Nakorn Industrial Estate in Chonburi Province employs approximately 160,000 people (with 550 tenant companies, about 60 percent of which are Japanese), Eastern Seaboard Industrial Estate approximately 55,000 people (with 220 tenant companies, a half of which are Japanese), and Amata City Industrial Estate approximately 30,000 people (with 130 tenant

companies, 24 percent of which are Japanese)<sup>18</sup>.範圍

Of these incoming populations, a considerable portion is considered to be from the northeastern region. Since the latter half of the 1980s, people from the northeastern part of the country, where industrial development was lagging behind, have converged on the newly-built, growing industrial zones, such as the Eastern Seaboard and the north industrial zone spanning from Bangkok to Ayutthaya. At that time started the trend that migrant workers there send a part of their earnings to their homeland.

#### **4.3.4 The Thai government's initiatives in creating industrial estates**

The development of industrial complexes in Thailand started as early as in the 1970s, with Nava Nakorn Industrial Zone (Pathum Thani Province) in 1971, for example. Yet, it became more active in the latter half of the 1980s.

Since then, many industrial estates were constructed one after another, including Rojana Industrial Park established in 1988, Saha Rattana Nakorn Industrial Estate in 1991, and many others in the Ayutthaya area that sustained significant damage from the flooding of Chao Phraya at the end of 2011.

A rush of industrial park constructions was also observed in the Eastern Seaboard since 1988, as described earlier. Many of them were built in the latter half of the 1990s. Industrial complexes in this area were first planned in the coastal area neighboring the ports of Laem Chabang and Map Ta Phut. Later they extended inland (along National Road No. 331) in search of broader lands (Amata City Industrial Estate and Eastern Seaboard Industrial Estate), and ended up occupying an expanse of 50 square kilometers.

Industrial Estate Authority of Thailand (IEAT) was deeply involved in the process of creating these industrial estates. The parks developed by the IEAT have been directly operated by the authority. Thus the IEAT provided tenant firms with investment incentives, public infrastructure services in and out of the parks, and so forth. In 1987, when the Eastern Seaboard Industrial Estate was yet to be completed, the number of industrial estates run by the IEAT was only five (two in Bangkok, two in Bangkok's suburban province, Samut Prakan, and one in a northern province, Lamphun), but was soon to increase to include Chonburi, Laem Chabang, Eastern Seaboard, Map Ta Phut, and Amata City Industrial Estates. Concurrently, many industrial estates based on non-IEAT, private capital were built in the Eastern Seaboard area. As a matter of fact, non-IEAT industrial estates were the mainstay in the central Ayutthaya area. In and after the 1990s, the development of Thai industrial estates was transferred from the government's initiative to the private sector backed by the successful growth of the Thai economy (most notably, transformation from the import substitution economy to the export-oriented economy) tapping into foreign fund.

As well known, the Thai government divides its entire territory into three zones: Zone 1 corresponds to the Bangkok metropolitan area; Zone 2 covers the downstream of Chao Phraya

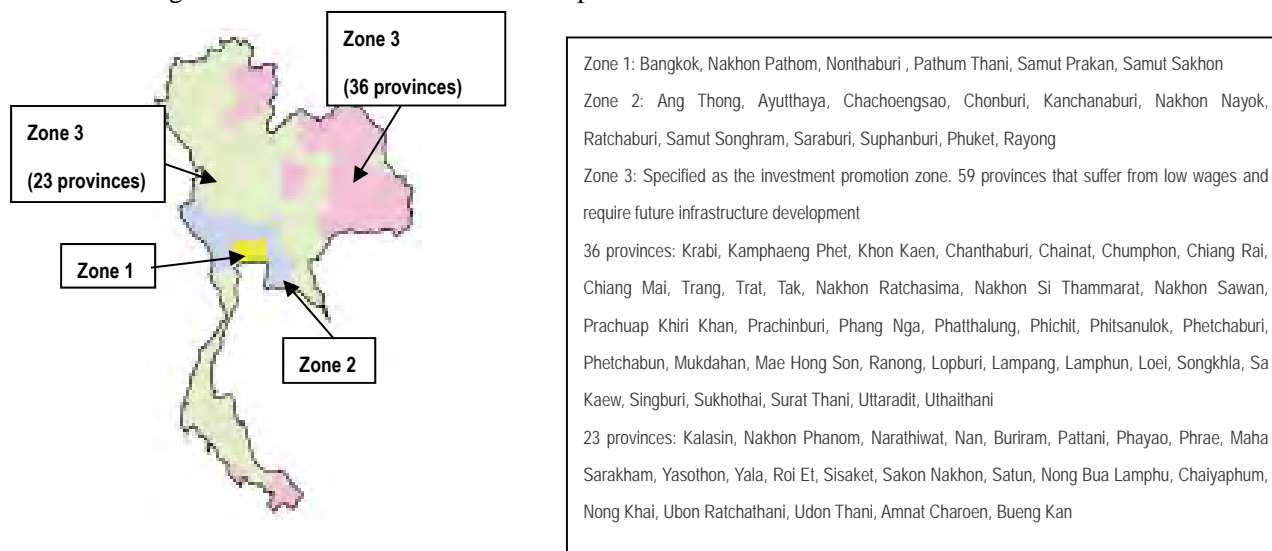
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<sup>18</sup> Based on the Survey Report on the Industrial Estates in Thailand (by JETRO Bangkok Center, March 2011)



skirting the metropolitan area, including Ayutthaya, and the Eastern Seaboard; and all the other areas fall under Zone 3. With this zoning, the government provided preferential treatment to investments into Zone 2, in forms of tax benefits, infrastructure development, and so forth (See Figure 4.4 below.)

Figure 4.4 BOI Investment Zone Map



Source: Website of the Board of Investment of Thailand (BOI)

As for the trend in the 2000s, though detailed data are unavailable, according to the interviews with local offices of Japanese companies and the JETRO office in Thailand during the field surveys to the country under this study in March and June 2012, even the Eastern Seaboard was already facing tight labor supply, rising labor costs, land cost hikes, and other issues. It seems that the construction of new plants is moving northward from this region and gradually spreading to sites adjacent to the northeast region.

#### 4.3.5 Trends of Industrial Zones and Migrant Workers

The plant worker interviews conducted in June 2012 under this study also found that they were remitting an average of approximately 30 percent of their salary to their hometowns. About a half of the interviewees expressed their will to go home if they see increasing opportunities for employment by new factories or the like there. (See Chapter 7 “Thai Labor Market Analysis (Sampling Survey)” of this report for the detailed findings from the interviews.)<sup>19</sup>

In recent years, enterprises can choose a location in the north and northeast regions of the country, in addition to the industrial estates in the central region and the Eastern Seaboard where

<sup>19</sup> The survey addressed 678 laborers working at companies in the central, east coastal and northeastern regions (280, 261, and 137 workers, respectively.)

many companies have resided, in search of land less susceptible to flood damage or land of a size accessible by small- and medium-sized enterprises. If the infrastructure in the northeastern region is to be developed, the under-industrialized area may well go through serious industrialization at last, which will in return narrow the economic gap between the region and the Bangkok metropolitan area, the central region on its outskirts and the Eastern Seaboard. In such a case, the country may well see dynamic labor movement, such as a U-turn of the migrant workers currently working in the metropolitan area, the central region and the Eastern Seaboard to the northeast region.

In January 2013, the author re-visited the JETRO office in Thailand during the field survey under this study. The officials explained that, at a seminar held by the BOI in Bangkok in mid-January, the Thai government stated that they would “abandon the existing investment zones, and pursue policy measures to foster high value adding industries nationwide without stopping primary industries from leaving the country.” The degree of these attempts becoming a reality relies on the future of the Thai government’s minimum wage policy, the development of the wide Mekong area connecting the northeast region of Thailand with Laos, Vietnam and Myanmar, and several other factors.

Many Japanese and non-Japanese plants flock in the Eastern Seaboard. While the importance of its role will no doubt remain solid, its positioning may change over time depending on how the government will drive its investment, labor and industrial policies in the future.

## Chapter 5 Education in Thailand

### 5.1 Educational system in Thailand

The school educational system in Thailand consists of two stages, basic education and higher education. Basic education is composed of a total of 12 years of education in three phases; six years of “primary education” (first to sixth grades), which corresponds to elementary school education in Japan, three years of “lower secondary education” (seventh to ninth grades), which corresponds to junior high school education in Japan, and three years of “upper secondary education” (tenth to twelfth grades), which corresponds to high school education in Japan<sup>20</sup>. Higher education consists of a 2-year program basically for students aged 18 and above to obtain an associate degree, corresponding to a junior college program in Japan, and a 4-year college program to obtain a bachelor degree. In the Thai society, academic qualifications are considered very important, and, especially in recent years, the rate of going on to higher education has been high. The advancement rate from upper secondary schools to universities is 60.5% as of 2010<sup>21</sup>. As in Japan, there are graduate schools for 1-year or 2-year master’s program after college program and 3-year doctoral program after that, and students receive a master’s or doctor’s degree when they complete the course.

In Thailand, various educational reform measures have been carried out recently, especially since the late 1990s, to form the current educational system. First, the new constitution promulgated in 1997 stipulated the right to free and quality basic education of at least 12 years as citizens’ right. Two years later, in August 1999, the National Education Act, the first basic education law in the history of Thailand, was promulgated. The National Education Act, as well as the constitution, clearly stipulated that basic education shall be 12 years and provision of equal education opportunities to the citizens shall be the duty of the government. Moreover, in 2001, the Basic Education Curriculum was established and the previous primary and secondary education classifications were abolished. This defined the 12 years of education from primary to upper secondary education as a unified basic educational stage<sup>22</sup>.

As in Japan, preschool education is provided to children aged 3 to 5 years in Thailand. While kindergartens are the major institutes for preschool education in the metropolitan area, rural areas have preschool classrooms established in primary school buildings and have nursery schools installed on the premises of temples and the like. Although enrollment is voluntary, the average enrollment rate in kindergarten in the country is as high as 115.6% as of 2010, because there are cases where children under 3 years of age go to nursery schools and school-age children over 6 years

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<sup>20</sup> As described later, students can choose between “upper secondary education” for ordinary education and “upper secondary vocational education” for vocational training corresponding to technical college in Japan after they complete “lower secondary education.”

<sup>21</sup> In Thailand, there are two “Open Universities”, which students can enter without taking examination. One is Ramkhamhaeng University (with about 360,000 students) and the other is Sukhothai Thammathirat University (with about 160,000 students). These two universities contribute to an increase in university entrance rate in Thailand.

<sup>22</sup> Basic education stipulated in the “National Education Act” and the “Basic Education Curriculum” does not include the three years of preschool education.

of age are in kindergarten.

Primary education is free compulsory education for six years from the age of 6. Full attendance has been achieved for primary education. As some students enter primary schools at a younger age or repeat the same grade, the total attendance rate has been exceeding 100% every year since 1998.

One of the differences in school educational system between Japan and Thailand is that, in Thailand, there are no “public schools” set up by local municipalities. It means, as a general rule, all schools are either national or private schools and all teaching staffs of national schools from primary schools to universities are national government employees. Therefore, the salary level of teachers is lower than that of the private sector. For this reason, not many students especially in the science and engineering majors with a bachelor’s degree or above want to be a teacher and it is one of the issues that are getting salient recently.

## **5.2 Changes in Educational System and Compulsory Education in Thailand**

In Thailand, the national government did not show interest in education before the 20th century. His Majesty the king Rama V, also known as King Chulalongkorn, made efforts to spread the equivalent level of basic education to that of Western countries among the public in Thailand. However, due to lack of school buildings, teachers and other requisites, basic education did not spread among the general public as intended. After King Chulalongkorn passed away, King Vajiravudh, Rama VI of the Chakri Dynasty, assumed the throne in 1910. Rama VI continued promotion of a series of reform measures for modernization called the “Reform of Chakri Dynasty,” started by Rama V, and one of the main pillars of it was educational reform. In response to this, the Thai government started focusing on raising the educational level of the citizens in the 1910s. Rama VI founded a royal school to train government officials (current Chulalongkorn University) and also schools for basic education to spread basic education among the general public<sup>23</sup>. Thanks to Rama V and Rama VI, who attached the same level of importance to education as the administration of the country to develop the country and catch up with Western countries, the Thai government started investment in education in an early stage.

It was 1921, more than 90 years ago, when the Primary Education Act was promulgated and 4-year primary school education was mandated<sup>24</sup>. However, it was not easy to increase the number of students, partly because of exemption from compulsory education for handicapped children, children with infectious disease, children who live more than 3.2 km away from school, and so on. The government announced a public education plan in 1933, the year after the constitutional revolution of 1932, expanding opportunities for education and emphasizing education to promote the

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<sup>23</sup> Chulalongkorn University is a school for government officials founded by Rama VI in 1917 to commemorate a deed of his father, Rama V, and to promote modernization. It was the first university in Thailand. Chulalongkorn University has now become a comprehensive university with 36,000 students in 18 faculties and 11 research institutes. The percentage of graduate students to all students at the university amounts to 36%. Along with Thammasat University, Chulalongkorn University is one of the two greatest among the highest educational institutions in Thailand.

<sup>24</sup> At that time, the primary and secondary education curriculums consisted of 4-year primary education, 3-year lower secondary education and 2-year upper secondary education.

national culture. Although the Primary Education Act was revised and primary education was made free in 1935, a large number of students still dropped out even from 4-year primary education.

Field Marshal Sarit Thanarat, who steered Thailand toward modernization and industrialization, overthrew the then administration of Phibul Songkhram in a coup d'état and became prime minister in 1959. The Sarit regime was so called a dictatorship in the name of economic development, where the military government promoted economic development as a top priority; at the same time, he promoted education-oriented policies, based on the view that the most important resource for nation building is people. To improve national education, Sarit established the National Education Plan in 1960 and implemented the plan in parallel with the First National Economic and Social Development Plan, which started in the following 1961. The First National Education Plan especially emphasized primary education and about 60% of the total education budget was allocated to primary education<sup>25</sup>. The Sarit administration also made efforts to expand education in rural areas to overcome the lag in rural development. As a result, the literacy rate of people aged 15 and above increased from 67.7% in 1960 to 78.6% in 1970, 88.0% in 1980, 93.3% in 1990, and finally 98.1% in 2005<sup>26</sup>. As seen in Table 5.1, along with Japan and the Republic of Korea, Thailand has a high literacy rate in Asia.

Table 5.1 Literacy Rate in Asian Countries (Unit: %)

Country	1990		2000	
	Men	Women	Men	Women
Thailand	96	91	97	94
Philippines	93	92	96	95
Indonesia	88	75	92	82
Malaysia	87	75	91	84
Myanmar	87	74	89	81
Republic of Korea	98	93	99	96
Singapore	95	83	96	88

Source: Compiled by author with data from UNESCO EFA2000

Under the National Education Plan, which was implemented in 1961, the former 4-3-2 basic educational system was replaced with a 7-3-2 system. With this, not only 4-year primary education but also 3-year lower secondary education was mandated and the number of years of compulsory education was increased from four to seven. However, it was only children of relatively wealthy

<sup>25</sup> In 2010, the proportion of education-related expenditure to the total government expenditure was 22.3%, and 48% of the education-related expenditure was for primary education. As for lower and upper secondary education, 16% and 17% were allocated, respectively.

<sup>26</sup> According to UNESCO UIS 2012, the literacy rate of people aged 15 and above in Thailand is 94.2% (96.7% for males and 91.6% for females) as of 2010. Literacy rate data varies depending on the source.

families in urban areas such as the Bangkok metropolitan area who could actually complete seven years of compulsory education at that time. Most rural areas in the northern, northeastern and other regions did not have lower secondary schools, and there were quite a few areas where most residents in their prime had received only 4-year primary school education.

Through the curriculum reform carried out in 1978, primary education was expanded from four years to six years, and the current curriculum of a total of twelve years, including three years of lower secondary education and three years of upper secondary education, was established. Following this, the Primary Education Act was revised and the years of compulsory education was shortened from a total of seven years — four years of primary education and three years of lower secondary education — to six years of primary education alone. Thanks to the series of education reform measures, the enrollment rate in primary education reached 98.2% in 1980. Under the National Education Act, enacted in 1999, and the Compulsory Education Act, enacted in 2002, the duration of compulsory education has been nine years, consisting of six years of primary education and three years of lower secondary education, since March 2002.

### **5.3 Regional Disparity in Lower and Upper Secondary School Education**

Compared with primary education, there was a clearer disparity between urban areas and rural areas in enrollment rates in secondary education until recently. Lower secondary education is ordinary education provided to children aged 12 and above for three years after primary education and it corresponds to junior high school education in Japan. As stated earlier, along with primary education, lower secondary education has been compulsory since 2002. However, until recently, the enrollment rate in secondary school in rural areas was extremely low and children usually helped their parents with farming or went to urban areas to work after finishing primary education. If they went to urban areas to work, those who did not even fully complete primary education could not get into the formal labor market where the legal minimum wage was guaranteed. As a result, farmers ended up working in the informal sector in which they are hired at lower wages. In the wake of a sharp fall in prices of agricultural products in 1982, a large number of farmers migrated from the northern and northeastern regions into Bangkok to find job opportunities and formed major slums such as Khlong Toei. They were not able to enter the formal labor market because they did not have enough education. Thus, it seems that, through the filter of the formal labor market, the disparity in educational opportunities between urban and rural areas formed a major cause of the issues of urban poverty as well as economic disparity between urban and rural areas.

In 1985, Bangkok is the only area where the rates of students going on to lower secondary school exceeded 90%. At that time, the rate averaged less than 50% at the national level and less than 30% in the northeastern region<sup>27</sup>. Even six years later, in 1991, the rate in the northeastern region exceeded 50% only in major cities, Khon Kaen (57.7%) and Nakhon Ratchasima (50.8%).

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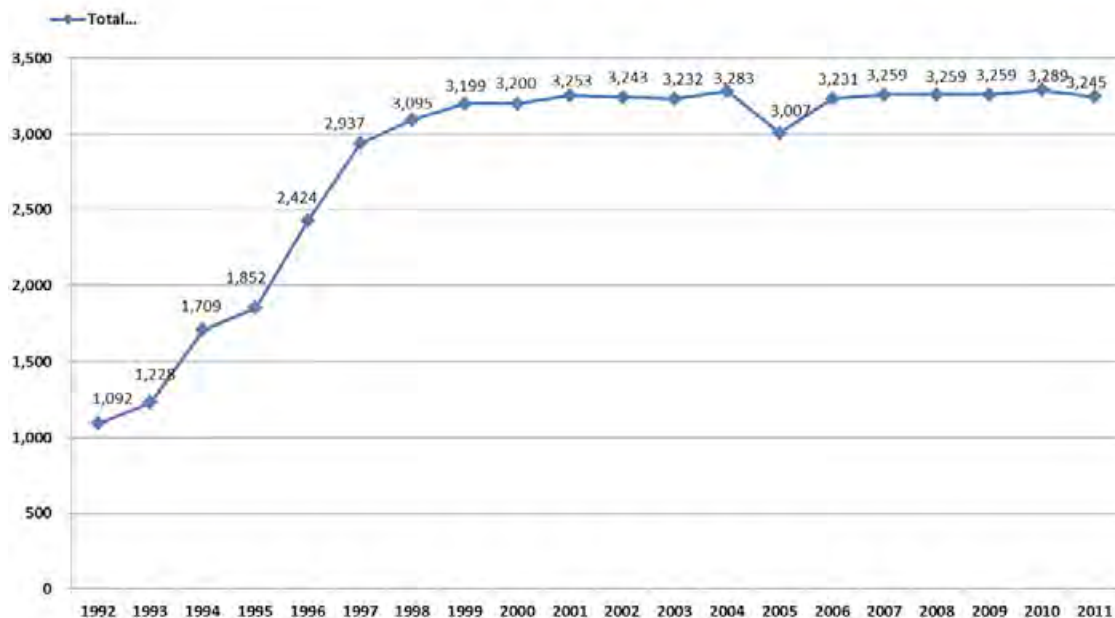
<sup>27</sup> In the northeastern region, the rate of students going on to lower secondary school as of 1985 was the highest in Khon Kaen (31.9%), followed by Nakhon Ratchasima (29.7%) and Ubon Ratchathani (25.7%).

Looking at the advancement rates in the metropolitan area in 1991, Bangkok (103.0%) was the top, followed by Nonthaburi (93.4%) on the north of Bangkok, and Chonburi (84.7%), which has the Eastern Seaboard. In these areas, many industrial estates were developed from early on and many foreign countries including Japan made a large amount of direct investment and carried out production activities. Thus, it is believed that one contributing factor to the increase in the advancement rate was the demand for young labor force who graduated from lower secondary schools as production line workers at factories.

What caused the gap in the advancement rates to lower secondary education between the Bangkok metropolitan area and rural regions including the northeastern region? There are some possible reasons. First, many children in rural areas could not go to school due to financial reasons and had no choice but to be engaged in agricultural and other labor. Less educated parents were not employed at a sufficient wage, and therefore their income was small; as a result, they could not provide their children with education opportunities, resulting in the so-called poverty spiral. However, in addition to the financial reason, there was also another big reason that most of the lower secondary schools were located in the Bangkok metropolitan area and many rural areas in the northeastern and northern regions did not have secondary schools till around mid-1990s. Moreover, the issue of securing and allocating a sufficient number of teachers cannot be overlooked as a factor on the side of the education service providers.

In the 1990s, the Thai government introduced a new institutional framework to respond to the issue of shortage of lower secondary schools in rural areas. The government introduced a new system of temporary lower secondary schools called “Opportunity Expansion Junior High Schools,” established on the property of existing primary schools in rural areas where primary school teachers taught secondary school students. As Thailand does not have a qualification system for teachers in primary and secondary education, it was possible for primary school teachers to teach at secondary schools. Primary school teachers taught at secondary schools after they attended training workshop held by the Board of Education and quickly learned education techniques for secondary schools. The tuition of Opportunity Expansion Junior High Schools was free and textbooks were also distributed free. The government encouraged enrollment in lower secondary school by providing free school lunch.

Figure 5.1 Number of Opportunity Expansion Junior High Schools in the Northeastern Region (1992-2011)



Source: Compiled by author based on data from the Office of Basic Education Commission (OBEC), Ministry of Education, Thailand

Figure 5.1 shows the trend in the number of Opportunity Expansion Junior High Schools in the northeastern region from 1992 to 2011. In 1992, there were only 1,092 Opportunity Expansion Junior High Schools in the whole northeastern region, but the number increased almost threefold to 3,289 at the peak in 2010. It is particularly worth paying attention to the rate of increase of Opportunity Expansion Junior High Schools before the currency crisis. In just five years from 1992 to 1997, the number increased 2.7 times to 2,937. The rate of increase was remarkably high especially in two years from 1995 to 1997, just before the currency crisis. In the two years, the number of Opportunity Expansion Junior High Schools in the northeastern region increased by as much as 58.6% from 1995.

Next, let's see the trend in the number of Opportunity Expansion Junior High Schools opened in each area of the northeastern region from 1992 to 2011. Table 5.6 shows the numbers of Opportunity Expansion Junior High Schools in each year by province in the region. In 2011, there were a total of 3,245 Opportunity Expansion Junior High Schools in the northeastern region. When looking at individual areas, Nakhon Ratchasima, the gateway to the region, has the largest number, 414, followed by Buriram (277) on the east of Nakhon Ratchasima, and Ubon Ratchathani (276), the easternmost province in the northeastern region bordered with Laos. Khon Kaen, a major city of the region, had only 256. In 2011, the area with the smallest number of Opportunity Expansion Junior High Schools in the region was Nong Khai, the northernmost city in the region, which had 46



schools<sup>28</sup>, followed by Amnat Charoen (55) on the north of Ubon Ratchathani, and Mukdahan (57) situated on the Thai side of the Second Thai-Lao Friendship Bridge on the border with Laos.

Table 5.2 Opportunity Expansion Junior High Schools Opened in the Northeastern Region (1992-2011)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
(Bangkok)	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	5	5	5	5	5
Galasin	69	41	90	90	102	146	141	154	151	152	152	150	150	147	148	148	148	148	147	147
Khon Kaen	77	147	147	147	219	242	250	253	255	259	258	257	262	255	255	256	256	256	256	256
Chaiyaphum	49	61	93	93	115	134	157	157	156	156	153	148	151	149	149	150	150	150	149	150
Nakorn Panom	36	30	59	61	68	74	76	82	82	84	84	84	83	82	82	82	82	82	82	84
Nakorn Ratchasima	176	215	240	242	335	371	385	400	400	402	399	394	400	158	394	402	402	402	414	414
Buriram	87	62	-	132	212	257	267	273	276	276	276	275	276	275	276	276	276	276	277	277
Maha Sarakam	43	43	75	75	81	113	114	119	118	117	117	116	118	116	116	117	117	117	117	118
Mukdahan	24	31	42	42	46	54	54	55	55	57	57	57	57	57	57	57	57	57	57	57
Yasothon	36	34	61	65	79	82	96	96	96	96	96	96	96	95	96	96	96	96	97	96
Roi Et	55	51	93	91	126	203	205	213	213	216	215	215	223	217	216	216	216	216	217	218
Loei	39	53	69	68	96	98	103	110	109	111	111	110	110	108	108	108	108	108	108	108
Sakon Nakorn	45	47	97	101	129	153	175	183	185	183	183	183	188	185	183	186	186	186	188	188
Surin	57	64	129	129	168	183	200	202	202	205	205	206	208	215	208	210	210	210	213	213
Sri Saket	61	91	116	116	141	195	208	215	215	219	219	219	222	219	219	222	222	222	228	230
Nongkhai	29	29	54	55	81	95	95	95	95	96	96	94	97	95	94	96	96	96	96	46
Nong Bua Lamphu	-	23	42	42	65	82	82	82	82	84	84	84	88	83	83	84	84	84	84	84
Udon Thani	112	107	107	107	143	179	209	218	217	220	220	220	221	220	219	224	224	224	230	230
Ubon Ratchathani	97	76	170	168	184	233	235	240	241	265	263	269	277	276	274	274	274	274	276	276
Amnat Charoen	-	23	25	28	34	43	43	52	52	55	55	55	56	55	55	55	55	55	55	55
<b>Total (Northeast)</b>	<b>1,092</b>	<b>1,228</b>	<b>1,709</b>	<b>1,852</b>	<b>2,424</b>	<b>2,937</b>	<b>3,095</b>	<b>3,199</b>	<b>3,200</b>	<b>3,253</b>	<b>3,243</b>	<b>3,232</b>	<b>3,283</b>	<b>3,007</b>	<b>3,231</b>	<b>3,259</b>	<b>3,259</b>	<b>3,259</b>	<b>3,289</b>	<b>3,245</b>

Source: Compiled by author based on data from the Office of Basic Education Commission (OBEC), Ministry of Education, Thailand

In six years from 1992 to 1997, the year when the currency crisis occurred, there was a sharp rise in the number of Opportunity Expansion Junior High Schools in all the provinces of the northeastern region. Looking at the data in the six years from 1992, Roi Et has the highest rate of increase, about 3.7-fold, followed by Nong Bua Lamphu (3.6-fold) and Sakon Nakhon (3.4-fold). The other provinces where the number of Opportunity Expansion Junior High Schools increased three-fold or more in the six years from 1992 to 1997 are Nong Khai (about 3.3-fold), Surin (3.2-fold), Sisaket (3.2-fold) and Khon Kaen (310%). The common ground among these provinces with the increase rate of over 300% is that, except Khon Kaen, they all are poverty areas with lowest income per capita in the northeastern region. Expansion of Opportunity Expansion Junior High Schools in these areas in the northeastern region indicates that, before 1990, these provinces did not have as many secondary schools as in other areas or had none. To raise the level of secondary education in these areas, poor both in terms of economics and education, the Thai government established many Opportunity Expansion Junior High Schools in the areas after 1990. As a result, the establishment of these Opportunity Expansion Junior High Schools helped to form a mechanism to exploit potential young labor force in the northeastern region and send them to the formal labor market across the country.

<sup>28</sup> The number of Opportunity Expansion Junior High Schools from 1997 to 2010 in Nong Khai hovered between 94 and 97. Please note that the figure, 46, is only found in 2011.

The introduction of Opportunity Expansion Junior High Schools dramatically raised the rate of students going on to lower secondary schools, especially in rural areas. The average advancement rate from primary education to lower secondary education in the country increased from 33% to 56% in five years from 1991 to 1996. Then the rate further increased to 82.2% in 2002 and finally reached 96.8% in 2010<sup>29</sup>. After such improvement in lower secondary education, the government also started establishing Opportunity Expansion Schools for upper secondary education (hereinafter referred to as “Opportunity Expansion High Schools”) under the Abhisit administration in March 2009. Together with the expansion of completely free education, carried out in the same year to include the period of upper secondary education, the establishment of Opportunity Expansion High Schools raised the advancement rate to upper secondary schools and directly produced a large number of graduates from upper secondary schools. This contributed to the increase in labor supply in the formal labor market in Thailand.

Table 5.3 Advancement Rate to Secondary Schools (Unit: %)

	2002	2010
Lower secondary school	82.2	96.8
Upper secondary school	38.8	71.4

Source: Compiled by author based on data from the National Statistical Office (NSO)

#### 5.4 Upper Secondary Education and Regular Employment

While the advancement rate from primary education to lower secondary education steadily improved, the national average rate of students finishing lower secondary schools and going on to upper secondary schools, i.e., advancement rate to upper secondary schools, once rose to 41.5% in 1997 but dropped to 29.1% due to the 1997 currency crisis and the subsequent financial crisis. One of the possible influencing factors was that the crises brought out financial difficulties to households, forcing students to give up going to upper secondary schools. Another factor was that many students went to vocational high schools to acquire specific skills and get an advantage for job searching. After that, the advancement rate from lower secondary schools to upper secondary schools gradually recovered to 38.8% in 2002 on national average, and reached 71.4% in 2010, nearly doubled from 2002. It is believed that there was a significant influence of the above-mentioned free 15-year education from preschool to upper secondary education that started in 2009 and the establishment of Opportunity Expansion High Schools that also started in 2009.

Employment at a legal minimum wage means higher salary to workers than informal employment in the informal sector. Also, with regular employment, other various benefits such as bonus and paid holidays are provided in addition to monthly salary. Moreover, regular employment means that the workers are protected by labor laws including the Workers Protection Law from

<sup>29</sup> According to UNESCO, the advancement rate to lower secondary schools in 2010 was 80% (average of males and females).

employment-related risks such as unilateral dismissal without notice or illegal overtime work. That is, regular employment in the formal labor market in Thailand is synonymous with having a stable life.

The inflows of foreign capital into Thailand dramatically increased after 1988. In the 1990s, a large amount of capital from Japan and other foreign countries flew into Thailand. After the economic crisis, the proportion of foreign capital flowing into the manufacturing industry gradually increased<sup>30</sup>. With such foreign capital coming into Thailand in the form of direct investment, factories were set up in industrial estates in the country and started operation. For factory operation, many production line workers as well as managers were required. It means that, the more foreign capital flew into the country, the more the demand curve in the regular labor market shifted to the right. As such capital entered the demand side, the formal labor market in Thailand gradually showed the sign of excess demand.

Most companies including many Japanese companies operating in Thailand said that they hire workers for menial labor at a factory line (general workers) who graduated from upper secondary school as they need to read English words, learn English names and do four arithmetic operations for their work. A questionnaire survey conducted in the course of the study has also revealed that the respondents, Japanese companies in Ayutthaya, the Eastern Seaboard, Khon Kaen and Nakhon Ratchasima, employs in most cases the graduates from upper secondary school as general workers<sup>31</sup>. They are regular employees basically paid minimum wages<sup>32</sup>. It means that graduation from an upper secondary school has become a requirement to enter the so-called formal labor market and earn the minimum or higher wage. In that light, introduction of Opportunity Expansion High Schools was a significant contributing factor to the subsequent sustainable, rapid growth of the Thai economy, because Opportunity Expansion High Schools opened in rural areas encouraged the young people in rural areas of the northern and northeastern regions to obtain regular employment after graduating from upper secondary schools. Workers from the northern and northeastern regions are now able to send money to their family in a stable manner while having a secure life with a job in an industrial park in the central region or the Eastern Seaboard, even though it is difficult to find employment opportunities in their home town<sup>33</sup>. Thus it is not an overstatement to say that the establishment of Opportunity Expansion Schools triggered and facilitated labor supply from rural areas.

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<sup>30</sup> The proportion of the manufacturing industry to the total FDI in Thailand was 64.4% in 2000 and increased to 86.4% in 2009.

<sup>31</sup> The educational status of workers varies by age. Although most of the relatively young workers are graduates from upper secondary schools, a large number of workers over 40 did not graduate from lower secondary schools.

<sup>32</sup> They basically receive the legal minimum wage. However, as the labor market is getting tight, many companies pay more than the minimum.

<sup>33</sup> Through various interviews conducted in this research, it has become clear that many workers especially from the northeastern region have a strong intention to go back their homeland (northeastern region) to get a job if there were employment opportunities in the region.

Table 5.4 Number of Secondary School Students

	Lower secondary school	Upper secondary school
1985	1,302,988	559,424
1987	1,214,908	551,265
1989	1,270,639	492,523
1991	1,563,921	468,766
1993	1,989,216	562,069
1996	2,421,350	808,114
1998	2,420,713	961,815
2000	2,339,817	1,111,341
2002	2,368,920	1,699,734
2004	2,672,082	1,672,072
2006	2,782,081	1,868,999
2007	2,782,834	1,945,929

Source: Compiled by author with data from the Office of the Permanent Secretary, Ministry of Education

Table 5.4 shows the numbers of lower and upper secondary school students across Thailand for each year from 1985 to 2007. The number of lower secondary school students consistently increased after 1987 except when it dropped from 1996 to 2000<sup>34</sup>. Especially, the increase rate in the seven years from 1989 to 1996 was as high as 99.3%, compared with the rate in 1989. Such increase in the number of students coincides with the rapid increase in FDI from Japan and other countries that started in 1988. These figures indicate that many students advanced to lower secondary schools to seek a job in the new labor market in manufacturing in 1988, when the amount of direct investment more than tripled from the previous year.

On the other hand, the number of upper secondary school students suddenly started to increase in 1993 after temporarily dropping by 16.2% over the six years from 1985 to 1991. In the five years from 1993 to 1998, the number increased by as much as 71.12%. The increase rate of the number of upper secondary school students did not show any significant reduction after 2006 while the increase of lower secondary students slowed down from around 2004.

Interestingly, the table shows a 3- to 4-year time lag between the move of the number of lower secondary school students and that of the number of upper secondary school students. It indicates that, after many students entered and then graduated from lower secondary schools, most of them went on to upper secondary schools even though the number became slightly smaller. All things

<sup>34</sup> It is believed that the reason for the decrease of the number of lower secondary school students from 1996 to 2000 was that a large number of students advanced to vocational schools to acquire specific skills and get an advantage for job seeking when the employment situation got tough due to the economic crisis.

considered, it is clear that the number of students advanced to lower and upper secondary schools increased when FDI rapidly grew. And, it is believed that there was a causal connection through the filter of the formal labor market, rather than a simple correlation between the two phenomena. As stated earlier, behind this was a substantial influence of the requirement of graduation from upper secondary schools for entry into the formal labor market.

### **5.5 Regular Employment and Income Transfer**

It is important for the parents and guardians of children and young people in rural areas to make a decision to send their children to secondary schools, make them help farming or send them to urban areas to earn money. It is uncertain whether their children can make stable income even after graduating from school if the employment situation is not good. However, in Thailand, after 1990, the labor market for general workers became tight and people could get a job in the formal labor market if they graduated from upper secondary schools. If their children graduated from or dropped out of a primary or lower secondary school and were engaged in farming or got a job in the informal sector in an urban area, they would make some income in the short term. However, as the economy developed, it became clear that the net present value of children's lifetime income and the amount of money sent from them will be larger if investment is made in children's education instead of relying on cash income in the near term. Obviously, parents can obtain mid- and long-term stability if their children send a stable amount of money to them after completing upper secondary schools and entering the formal labor market. Moreover, if there is more income transferred from children, parents can purchase agricultural machine individually or jointly with other farmers in the neighborhood instead of depending on water buffalos that have traditionally been used for farming. It increases the productivity and agricultural revenue of each worker.

In fact, the average household income in the northeastern region has been increasing since 1990, and the proportion of transferred income has been increasing steadily except during the economic crisis. In the northeastern region, there has been no increase in household income led by the creation of employment opportunities since the 1990s. This is obvious from the fact that there was no increase in proportion of wage income to the average household income. On the other hand, the proportion of transferred income to the average household income has been increasing. The figure almost doubled from 8.33% in 1990 to 16.50% in 2007.

Moreover, the sales of tractors made by Japanese agricultural machinery manufacturers including Yanmar and Kubota have been steadily increasing in the northeastern region. It indicates that the growth of household income in the northeastern region is supported by the growing amount of money sent to the family from migrant workers from the northeastern region employed in areas with capital accumulation, such as the metropolitan area, the Eastern Seaboard, and Ayutthaya in the central region.

Table 5.5 shows the changes in the amount of loans for purchasing agricultural machines granted by the Bank for Agriculture and Agricultural Cooperatives (BAAC). The northern,

northeastern and southern regions are each divided into two areas, “North” and “South.” The table contains the numbers and monetary amounts of loan contracts in a total of nine areas – the six divisions mentioned above plus the central, eastern and western regions – from 2008 to 2012. Looking at the number of loan contracts and amount in each area, the northeastern region had the largest number of contracts over the entire period. The northern region comes after the northeastern region in the number of contracts. The southern region had the largest amount of loans from 2010 except in 2008 and 2009, when the northeastern region had the largest amount. The gap in loan amounts between the northern and northeastern regions gradually reduced after 2010.

It goes without saying that behind this were various policy measures carried out by the Thai government after 2001, including the debt moratorium, and the effect of such policy measures is clearly seen in the figures. However, it is also true that individual farmers have acquired ability to pay off the loans from BAAC. Behind this, there is stable income transfer from family members as well as stable agricultural revenue earned with the help of buyback program for agricultural products, etc.

Table 5.5 Trends in BAAC Loans for the Purchase of Agricultural Machines (Number of Contracts, 100 million baht)

Region	FY2008		FY2009		FY2010		FY2011	
	No. of contracts	Amount	No. of contracts	Amount	No. of contracts	Amount	No. of contracts	Amount
Northern (South)	1,140	198.75	1,220	231.21	1,328	297.79	1,175	354.62
Northern (North)	747	119.59	736	127.68	681	131.51	558	105.73
Northeastern (North)	1,360	219.90	1,507	256.30	1,540	239.24	1,224	264.81
Northeastern (South)	894	136.36	911	148.29	1,602	190.61	1,125	203.74
Central	269	61.89	292	68.37	263	72.07	213	74.94
Eastern	342	106.16	503	138.02	364	138.21	295	137.50
Western	234	61.80	345	89.70	337	92.61	291	85.15
Southern (North)	343	131.53	407	155.54	396	240.30	447	288.77
Southern (South)	556	159.91	654	224.87	743	307.98	695	386.11
<b>Total</b>	<b>5,885</b>	<b>1,195.89</b>	<b>6,575</b>	<b>1,439.98</b>	<b>7,254</b>	<b>1,710.32</b>	<b>6,023</b>	<b>1,901.38</b>

Note: FY based on Japanese fiscal year (from April to March of the following year)

Source: Compiled by author with data from the Ministry of Agriculture and Cooperatives

## 5.6 Vocational Education in Thailand

Under the amended labor law that took effect in 1998, young workers who were hired after graduating from lower secondary schools were granted the right to take special leave for higher-level education or training. With this, an increasing number of workers acquired further skills at vocational training schools across the country and changed jobs to get a higher wage.

Vocational training in Thailand is provided in two forms – formal school education and non-formal education. In school education, students can choose between ordinary education at upper secondary schools and vocational education at upper secondary vocational schools. Vocational

education is classified into upper secondary vocational education (vocational training high school) for vocational training for the three years from ages 15 to 18, which corresponds to upper secondary school education, and technical and advanced vocational education (vocational training college) provided for two years, which corresponds to the advanced education level such as junior college.

In upper secondary vocational schools that correspond to specialized high schools in Japan, many students across the country choose to specialize in agriculture and commerce. At the next level, there are two types of 2-year post-secondary vocational schools called technical and advanced vocational schools: one is for graduates from upper secondary vocational schools and another is for students who have completed ordinary upper secondary education. Those who have completed the former obtain a certificate of advanced vocational education and those who have completed the latter obtain a technical qualification equivalent to an associate degree. The associate curriculums are defined in a unified manner across the country by the Office of Vocational Education Commission, the Ministry of Education, in the ten fields of industry, commerce, art, domestic science, management, tourism, agriculture, fishery, textile and IT.

As described earlier, the rate of students going on to upper secondary schools after graduating from lower secondary schools, i.e., the advancement rate, increased to 41.5% on national average in 1997, and then dropped to 29.1% in 2000 due to the 1997 currency crisis and the subsequent economic crisis. It reflects the fact that many students entered upper secondary vocational schools to acquire specific skills and get an advantage for job seeking when the employment situation got tough due to the economic crisis. In 2001, the number of students in upper secondary vocational schools was about 400,000, accounting for about 20% of all the students in upper secondary schools across the country.

## Chapter 6 Labor Market in Thailand and Trend in Employment in Manufacturing Sector

### 6.1 Domestic Labor Market in Thailand

Table 6.1 shows the unemployment rate in Thailand between 1996 and 2011: the unemployment rate was at the 1% level until 1997 when the currency crisis occurred in Asia, soared in 1998 to 4.37%, and has been steadily falling since then except in 2001 and 2009<sup>35</sup>. The rate for the whole country has been remarkably low particularly since 2005: it fell under 2% in 2005, hovered at the 1% level and fell below 1% in 2011. According to the Labour Force Survey published by the National Statistical Office of the Ministry of Information and Communication Technology (NSO), the number of unemployed workers totaled 359,000 in May 2012, a drop of 18,000 from the previous month, or an increase of 155,000 from the same month the year before, and the unemployment rate increased from 0.5% marked in the same month the year before to 0.9%<sup>36</sup>.

Table 6.1 Unemployment Rate in Thailand (Unit: %)

1996	1997	1998	1999	2000	2001	2002	2003
1.68	1.65	4.37	4.17	3.19	3.32	2.49	2.16
2004	2005	2006	2007	2008	2009	2010	2011
2.07	1.83	1.51	1.38	1.39	1.5	1.04	0.4

Source: Report of the Labour Force Survey, the National Statistical Office

Unemployment in the domestic labor market has the following three characteristics. The first is that the unemployment rate itself is extremely low compared to other countries. In 2012, the rates of major advanced countries were 4.3% in Japan, 8.1% in the U.S., 7.9% in the U.K., 5.5% in Germany, 10.7% in Italy and 7.7% in Sweden. Among countries in Southeast Asia, the rates in 2012 were 7.03% in the Philippines, 6.20% in Indonesia, 4.47% in Vietnam, 3.0% in Malaysia and 1.95% in Singapore. The rate in Thailand alone was below 1%, though Singapore, the country with the lowest rate, recorded nearly 2%. In reality, however, rural areas and informal sectors in Thailand have surplus labor that covers unemployment. A number of researchers have long pointed out the possibility that unemployment rates tend to overestimate the labor market and thus do not reflect the actual state of unemployment. Even if this is taken into account, the unemployment rate below 1% shows nothing but the fact that the labor market was very tight for workers in urban areas<sup>37</sup>.

The second characteristic is that the rate for young people aged 15-24 is relatively high. As of

<sup>35</sup> The rate in 2009 may be affected by the Lehman shock.

<sup>36</sup> By region, the rates were 1% each in the Bangkok metropolitan, northern and southern regions; 0.9% in the northeastern region; and 0.8% in the central region.

<sup>37</sup> In Thailand, workers migrate from rural to urban areas in slack seasons for farmers, so the unemployment rate tends to be higher in such seasons.



May 2012, the unemployment rate for workers aged 25 and above was 0.5%, but the rate for workers aged 15-24 was almost eight times as high, 4.0%. Moreover, as seen in Table 6.2, the number of unemployed workers is the largest among university graduates, totaling more than 150,000. The number of unemployed workers graduating from primary schools or receiving no particular education totals 74,000 in all, which is less than a half of unemployed university graduates. Thus, if the numbers of unemployed workers in terms of both age and educational status are taken into account, unemployment is the most conspicuous among young people who have high educational backgrounds and have been in the labor market for two to three years after graduation.

Table 6.2 The Number of Unemployed Workers in Thailand, by Educational Status  
(as of May 2013)

Educational status	No. of unemployed	Unemployment rate (%)
University graduates	152,000	2.1
Graduates from upper secondary schools	49,000	0.9
Graduates from lower secondary schools	84,000	1.3
Graduates from primary schools	48,000	0.6
People with no education	26,000	0.2

Source: Compiled by author with data released by the Ministry of Information and Communication Technology

Similarly, statistical data published by the NSO show that Thailand's population aged 15 and above as of May 2012 totaled 54.45 million, of which labor force was 39.01 million. Of all the population, employed workers totaled 38.27 million; unemployed workers 359,000; workers on seasonal suspension 379,000; and non-labor force including housewives, students and elderly persons 15.44 million. The number of employed workers increased by 450,000 from the same month the year before, of whom agricultural workers totaled 14.39 million (year-on-year increase of 760,000) and non-agricultural workers 23.88 million (year-on-year decrease of 310,000).

Thailand is a society giving great weight to academic careers of individuals. As for engineers, for example, an average engineer graduating from upper vocational school started with a monthly salary of 10,200 baht in 2012, while an average engineer graduating from university was paid 16,800 baht in his first month<sup>38</sup>. An average general worker on production line at a factory who graduated from a lower secondary school started with a monthly salary of 9,757 baht<sup>39</sup>. The difference in payments suggests that the country has a social structure where the higher academic career gives the higher

<sup>38</sup> The start-up salary in this context is defined as the sum of basic pay and various allowances which do not include overtime payments. The amounts of the first salaries are median. For more details, see "Surveys on Wages and Labor Affairs," the Japanese Chamber of Commerce, Bangkok.

<sup>39</sup> Ditto

salary.

The science course of universities supplies some 20,000 – 30,000 newly graduated engineers to the labor market each year<sup>40</sup>. There are, on the other hand, 5,000 – 6,000 job vacancies in the manufacturing sector for newly graduated engineers: that is, the figures suggest that there is excess supply in the labor market for engineers newly graduating from universities. However, quite a few Japanese companies doing business in Thailand claim shortage of engineers<sup>41</sup>; that is, the domestic labor market exhibits a mismatch between highly educated workers and available jobs. Put differently, there is a gap in supply and demand in respect of technical skills that are the quality of engineers and wages for labor. This appears to be one of the factors causing a high unemployment rate among young workers newly graduating from universities.

Companies, if hiring not just engineers but university graduates in general, have to pay salaries high enough to meet their educational statuses. They thus opt to hire cheaper workers graduating from secondary or vocational schools for posts that do not require any special skills such as foreign languages which people can acquire only at universities. As a result, the demand for university graduates has been reduced so that supply exceeds demand. This appears to be a cause of the high unemployment rate among university graduates.

The third characteristic is the fact that the unemployment rate for graduates from upper secondary schools is 0.9%, which is lower than the rate for graduates from lower secondary schools. Graduates from primary schools only or workers receiving no education have difficulty in participating in the formal labor market in which workers are paid legal minimum wages. Thus, most of them find jobs in the informal sector in which they are paid less than legal minimum wages. Since the end of the 1980s, foreign companies hired factory workers from the formal labor market. For the perspectives of labor or production management, they chiefly hired workers graduating from at least upper secondary schools<sup>42</sup>. Workers hired by foreign capitals were paid legal minimum or higher wages, protected by the Worker Protection Law and various welfare schemes provided by their companies. The backgrounds and experience of workers at the end of the 1980s and afterwards later became, if not clearly, requirements or career standards that Thai workers felt they must satisfy so as to enter the formal labor market and find a job at foreign manufacturing companies.

Table 6.3 shows the percentages of industries to all the production activities in terms of gross domestic product (GDP) since 1970. The table illustrates that the percentage of agriculture, forestry

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<sup>40</sup> According to a survey report published in September 2005 by the National Economic and Social Development Board (NESDB), 118,089 technologists and engineers were supplied to the labor market in 2004; of these, graduates from secondary vocational schools totaled 16,493, those from technical colleges totaled 57,668, those from universities 39,471, and those from graduate schools 118,089. The number of university graduates with engineering degrees was 20,217.

<sup>41</sup> According to a questionnaire survey conducted in 2012 addressed to Japanese enterprises in Thailand by the Japanese Chamber of Commerce in Bangkok, a total of 63% of the manufacturers surveyed replied that they were short of engineers, and some 60% of the enterprises surveyed replied that they were short of workers at the management level.

<sup>42</sup> As described later, domestic capital manufacturers in Thailand hire a large number of workers graduating from or dropping out of lower secondary schools, compared to foreign capital manufacturers. As of 1998, 80% or more of workers hired in manufacturing in Thailand were graduates from lower secondary schools or those receiving lower educational backgrounds.

and fisheries was steadily decreasing from 1970 to 2001 with some fluctuations, and that the percentage of manufacturing was steadily increasing. The share of manufacturing continued to grow even after 2001 with some ups and downs. It should be noted that the percentage of agriculture, forestry and fisheries to GDP started to increase again in 2001.

Table 6.3 Percentages of Industrial Components to GDP in Thailand (unit: %)

Industry	1970	1980	1990	2001	2003	2005	2007	2009
<b>Agriculture, forestry and fisheries</b>	25.9	23.2	12.5	9.1	10.4	10.3	10.7	11.5
<b>Manufacturing</b>	16	21.5	27.2	33.4	34.8	34.7	35.6	34.2
<b>Retails and wholesale</b>	18.4	17.6	17.7	16.7	15	14.6	14.2	14.1
<b>Services</b>	11.4	14	13.4	13.4	13.3	13.2	12.5	12.8
<b>Others</b>	28.3	23.7	29.2	27.4	26.5	27.2	27	27.4
<b>Total</b>	100	100	100	100	100	100	100	100

Source: Compiled by the author with data released by the National Economic and Social Development Board (NESDB)

Table 6.4 lists the number of workers employed in each industry between 1995 and 2007. The table shows that the number of workers in manufacturing was steadily increasing throughout the period. A total of 4.64 million workers worked in manufacturing in 1997, and the number increased by 1 million in ten years to 5.62 million in 2007, which means that the manufacturing sector saw an increase of workers by as much as 21.1% in ten years. The number of workers in agriculture, forestry and fisheries, on the other hand, was steadily decreasing over the period 1995-2001 but started to increase in 2001. Moreover, retail and wholesale, and the services also saw increases in the number of workers. The magnitude of an increase in workers in the services was particularly conspicuous: the number of workers increased at a rate of 77.1% between 1995 and 2005.

Table 6.4 Number of Workers in Thailand, by Industry (Unit: 1,000 workers)

Industry	1995	1997	1999	2001	2003	2005	2007
<b>Agriculture, forestry and fisheries</b>	14,389.1	14,314.6	14,010.0	13,611.9	13,880.1	13,617.0	14,306.0
<b>Manufacturing</b>	4,608.2	4,644.2	4,661.0	4,926.9	5,298.7	5,587.9	5,619.3
<b>Retails and wholesale</b>	4,184.5	4,601.8	4,780.0	4,678.6	5,199.2	5,553.3	5,574.4
<b>Services</b>	4,132.3	4,370.9	4,794.0	6,065.5	6,373.4	7,317.7	7,317.7

Source: Compiled by author based on Report of the Labour Force Survey, the National Statistical Office

## 6.2 Definitions of Unemployed and Employed Workers in Thailand

Unemployment rate is an indicator calculated as unemployed persons /labor force x 100. Labor force is, on the other hand, the sum of employed workers and unemployed ones. Thus, to obtain an unemployment rate, the definitions of employed and unemployed workers must be first clarified. “Unemployed persons” and “employed persons” are defined as follows in Thailand<sup>43</sup>:

Unemployed persons (definition in Thailand):

An unemployed person shall be an individual who was aged 15 or older; had neither occupation, business nor farmland; and did not work in the week when the Labour Force Survey was conducted; and who falls under either of the following two categories:

- i. An individual looking for a job, having applied for a job or waiting for a result of job-seeking activity (interview) 30 days prior to the date of the survey, or
- ii. An individual not looking for a job 30 days prior to the date of the survey, but not having started to work within 7 days after the date of the survey.

On the other hand, an employed person shall be definable as follows<sup>44</sup>:

Employed persons (definition in Thailand):

An employed person shall be an individual who was aged 15 or older in the week when the Labour Force Survey was conducted; and falls under any of the following three categories:

- i. An individual who worked at least for an hour in exchange of a monetary wage, salary, profit or other forms of compensation,
- ii. An individual who did not work at all or work for less than an hour, but (i) received any wage, salary or profit from any business establishment, company or farmland within 30 days after the date of the survey or (ii) did not receive any form of compensation from any business establishment, company or farmland within 30 days after the date of the survey but had intention to return to his/her permanent business or job, or
- iii. An individual who worked for an hour or more without any compensation at any business establishment, company or farmland run or owned by the head of his/her family or any family member who shares the account.

## 6.3 ILO Standards and Unemployment Rate in Thailand

The International Labour Organization (ILO) defines unemployment and recommends that countries adopt it for the purpose of comparing unemployment rates among countries and regions with different social and economic circumstances, and labor practices and systems. Member

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<sup>43</sup> See Thailand Labour Force Survey (New Series) 2012, the National Statistical Office.

<sup>44</sup> Ditto

countries of the Organization for Economic Cooperation and Development (OECD) publish unemployment rates conforming to the ILO definition of unemployment (hereinafter referred to as the “ILO standards”). The definitions has been amended from time to time, and the current ones were adopted in 1982 by the 13th International Conference of Labour Statisticians. The ILO definitions of employment and unemployment are as follows.

Employed persons (the ILO standards):

Persons in employment comprise all persons above a specified age who, during a specified brief period, either one week or one day (hereinafter referred to as the “reference period,” were in the following categories:

- i. “paid employment,” that is, persons who, during the reference period, performed some work for wage or salary in cash or in kind for one hour or longer (including persons who had a formal attachment to their job but were temporarily not at work during the reference period), or
- ii. “self-employment,” that is persons who, during the reference period, performed some work for profit or family gain in cash or in kind for one hour or longer (including persons who were with an enterprise such as a business, farm or service but who were temporarily not at work during the reference period for any specific reason).

Unpaid workers for family businesses are included in self-employment regardless of working hours during the reference period. Any country setting out any minimum working hours when including unpaid workers for family businesses in employment shall give data on employment with working hours shorter than the said minimum working hours separately.

Constituent members of armed forces – both regular and temporary members – shall be included in employment.

Unemployed persons (the ILO standards):

Unemployed persons comprise all persons above a specific age who, during the reference period, were

- i. Without work, that is, were not in paid employment or self-employment,
- ii. Currently available for work, that is, were available for paid employment or self-employment, and
- iii. Seeking work, that is, had taken specific steps in a specified recent period to seek paid employment or self-employment.

The specific steps may include registration at a public or private employment exchange; application to employers; checking at worksites, farms, factory gates, market or other

assembly places; placing or answering newspaper advertisements; seeking assistance of friends or relatives; looking for land, building, machinery or equipment to establish own enterprise; arranging for financial resources; applying for permits and licenses, etc.

Notwithstanding the criterion of seeking work embodied in the standard definition of unemployment, persons without work and currently available for work who had made arrangements to take up paid employment or undertake self-employment activity at a date subsequent to the reference period should be considered as unemployed.

Persons temporarily absent from their jobs with no formal job attachment who were currently available for work but out of work should also be regarded as unemployed in accordance with the standard definition of unemployment. Countries may, however, depending on national circumstances and policies, prefer to relax the seeking work criterion in the case of persons temporarily laid off. In such cases, persons temporarily laid off who were not seeking work but classified as unemployed should be identified as a separate subcategory.

The ILO standards, however, range in definitions and allow countries and regions to adopt special exceptions to meet their circumstances, so definitions are somewhat different from each other among countries<sup>45</sup>. The ILO standards, for example, do not define any specific term of job searching activities as a requirement of unemployment. Japan, on the other hand, defines the unemployed as persons who performed job searching activities in the reference period of a week and those who were waiting for a result of job searching activities performed prior to the reference period. The U.S. and Canada define the unemployed as persons who performed job searching activities in the previous one month (four weeks); their definition of unemployment is thus stricter than that of Japan.

In comparison with the ILO standard definitions of employment and unemployment, the definitions adopted by Thailand comply with the ILO standards. There is not much difference between the Thai definitions and those of advanced countries or other countries in Southeast Asia. The Thai statistics define the term of job searching activities as four weeks as in the definitions of the U.S. and Canada, and the coverage age as persons aged 15 and older as in the definitions of Japan<sup>46</sup>. Taking all this into account, it seems that Thailand's unemployment rate does not underestimate real unemployment. As stated above, however, rural areas and the informal sector serve as buffers by holding surplus labor in Thailand, so such labor is not counted as unemployed

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<sup>45</sup> Unemployment rates in the European Union (EU) are published by not only each country but also Eurostat, which releases monthly unemployment rates in member states in accordance with the ILO standards. Differently from the definitions of Japan and the U.S., Eurostat defines the unemployed as persons aged between 15 and 74 who, in the reference period, (i) had no work; (ii) were available within two weeks; and (iii) performed job searching activities in the previous four weeks.

<sup>46</sup> The U.S. and the U.K. cover persons aged 16 and above, while Canada and France, as well as Japan, cover persons aged 15 and above.

workers. Moreover, the presence of seasonal inactive labor force, almost unemployed workers, is a unique characteristic of the Thai labor market. Even so, neither surplus labor nor seasonal inactive labor can give a clear account of the unemployment rate below 1%.

#### **6.4 Trend in Employment in Manufacturing in Thailand**

In the first quarter of 2010, the number of employed persons totaled 38.06 million, of whom 7.84 workers were employed in the mining and manufacturing industry; 14.44 million workers in agriculture; and 15.78 million workers in the services. In terms of percentage to entire employment, the mining and manufacturing industry accounted for 20.7%; agriculture 37.9% and services 41.4%. In the mining and manufacturing industry, 5.38 million workers were hired in manufacturing; 2.32 million workers in construction; 0.11 million workers in public utilities such as gas, water and electricity; and 0.42million workers in mining. The percentage of workers in manufacturing to all the employed workers in the mining and manufacturing industry was thus 68.6%; that is, 14.14% of all the employed workers in the Thai economy belonged to manufacturing.

For simplicity, let us divide employed workers aged 15-60 into three groups: the “young age group” covering persons aged 15-29; the “middle age group” persons aged 30-44; and the “old age group” persons aged 45-60. In the first quarter of 2010, the middle age group accounted for 48% of all the employed workers in manufacturing, followed by the old age group of 31.3% and the young age group of 20.7%. As of 2010, the mode of age distribution of workers in manufacturing was 32, up from 27 in 2004. The mode of age distribution of agricultural workers was the highest, 47, while that of workers in services was the lowest, 27.

Now, let us have a close look at the age distribution of workers in manufacturing for 20 years between 1991 and 2010<sup>47</sup>. The percentage of the middle age group increased from 33% in 1991 to 48% in 2010. That of the old age group increased from 12 % to 20.7%, too. The percentage of the young age group, on the other hand, decreased from 55% in 1991 to 31.3% in 2010. Behind this chiefly lie the following two factors: the first factor is a change in the form of demographic pyramid due to a drop in the birth rate, resulting in a decrease in the absolute number of persons classified into the young age group<sup>48</sup>. The second factor is an expansion in opportunities to receive education: young people who could have been supplied to the labor market in the past remain in education thanks to an expansion in educational opportunities. Both factors cause the participation rate of young workers in the labor market to decrease. Paitoonpong, Tasee and Sodasith (2012) give the educational levels of workers in Thailand as of 2010<sup>49</sup>: of all the 38.06 million employed workers across the country, 54.6% had received education at most at primary schools; 15.7% were graduates from or dropped out of lower secondary schools; 10.4% were graduates from or dropped out of

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<sup>47</sup> For details, see the *Labour Force Surveys 1991-2010*.

<sup>48</sup> The total fertility rate of Thailand was below 1.6 in 2010, the rate for Bangkok was particularly low, below 1 (0.88). Quite a few rural areas have rates below 2.

<sup>49</sup> Paitoonpong, S., P. Tasee, J. Sodasith [2012], “Demographic Aspects of Workers in Manufacturing and Impacts on Labor Productivity,” *TDRI Quarterly Review*, Vol. 27, No. 1, pp. 3 ~ 11.

upper secondary schools; 3.4% were graduates from or dropped out of vocational colleges; and 11.5% were graduates of universities or higher education.

The academic structure (educational structure) of workers in Thailand has been improved over the previous 20 years or more. According to Srawooth (2011), the percentage of workers who at most graduated from lower secondary schools has been constantly falling from 89.5% in 1988 to 84.1% in 1998, 72.3% in 2008 and to 70.5% in 2010<sup>50</sup>. The change in educational backgrounds is, as already stated, attributable chiefly to a drop in the population growth rate and an improvement in educational levels. The former reduces the total population in school age and the latter prompts more young people to go on to lower and upper secondary schools.

Next, let us focus on the educational levels of workers in manufacturing. The educational structure of workers in manufacturing is higher than the general structure. In 2010, the majority of workers, 68.3%, were graduates from or dropped out of lower secondary schools; 17% were graduates of or dropped out of upper secondary schools; and 14% had higher educational backgrounds.

The decreased birth rate and increased educational levels had the similar impacts on the academic structure of workers employed between 1991 and 2010 in manufacturing. Workers at most graduating from lower secondary schools accounted for 86% of all employees in manufacturing in 1991, but the share fell to 68% in 2010. On the other hand, the percentage of those graduating from or dropping out of upper secondary schools increased from 10% in 1991 to 17.6% in 2010; and the percentage of those having advanced education at universities and advanced vocational schools almost tripled from 5% to 14% over the period.

Not only the characteristics of employed workers in manufacturing but also the environment surrounding them substantially changed in the 20 years. By residential area, 45.7% of all the population resided in urban areas, and the remaining 54.3% in non-urban areas. In 2010, 62.8% of employed workers in manufacturing worked in non-urban areas, which suggests that manufacturing sites expanded gradually from urban areas to neighboring or rural areas. Of manufacturers, food manufacturing plants, among other things, are normally located outside urban areas. The percentage of employed workers in rural (non-urban) areas to all employed workers in manufacturing during the period 1991-2010 increased from 44% in 1991 to 62.8% in 2010<sup>51</sup>. This suggests that the food manufacturing, textile, sewn products manufacturing and other relatively labor-intensive industries expanded their production sites to non-urban areas where wages were cheaper over the previous 20 years.

The Harris–Todaro model, a theoretical model in development economics, explains the mechanism of rural-urban migration in developing countries<sup>52</sup>. The model asserts that the gap

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<sup>50</sup> Srawooth Paitoonpong [2011], “*The Structure of the Labor Force and the Imbalance between Labor Supply and Demand in Thailand*,” 11<sup>th</sup> Thai Labour Standard Day, May 27<sup>th</sup>, 2011, Bitec Conference Hall, Department of Labour, Welfare and Protection.

<sup>51</sup> For details, see the *Labour Force Surveys 1991-2010*.

<sup>52</sup> See Harris, J. R., and M. P. Todaro [1970], “Migration, Unemployment and Development: A Two-Sector Analysis,” *American Economic Review*, Vol. 60, pp. 126-142.



between expected urban wage and real rural wage causes rural-urban migration<sup>53</sup>. In January 2013, the Thai authority raised the legal minimum daily wage uniformly to 300 baht across the country. When nominal urban wages are the same as nominal rural wages, there will be no incentive for rural workers to move to urban areas unless the probability of finding a job in an urban area is higher than that in their hometowns. The present economic growth in Thailand has been undoubtedly backed by plentiful labor force from rural areas in the northern, northeastern and other regions to the Bangkok metropolitan area, the Eastern Seaboard and other regions with capital concentration. The legal minimum wage scheme uniformly applying 300 baht nationwide may possibly reduce labor supply from rural to urban areas. As stated above, the manufacturing sector in Thailand faces shortages of labor – not just engineers but also workers at managerial levels and general workers. A uniform raise in the minimum wage when labor demand exceeds the supply may possibly curb rural-urban migration and deteriorate the labor market in urban areas.

## **6.5 Summary of Foreign Workers from Three Neighboring Countries to Thailand**

As in the previous section, it has been confirmed that the educational level of workers in manufacturing is higher than that of general workers. As educational opportunities expand, workers have been moving from non-manufacturing to manufacturing. At the same time, labor shortages in labor-intensive non-manufacturing sectors are made up for by workers from abroad, who thus are essential for analyses of the labor market in Thailand.

The flow of migrant workers from the three neighboring countries – Myanmar, Laos and Cambodia – to Thailand increased around 1990. The borders to Thailand were opened up, the Thai economy had already shifted to export-oriented, an increasing number of rural workers moved to Bangkok and industrial areas, and labor-intensive industries started to suffer from shortages of unskilled labor. Foreign workers quite timely came from the neighboring countries to plug holes in the labor market in Thailand. The number of migrant workers was steadily increasing as the Thai economy continued to grow<sup>54</sup>. At the beginning of the 1990s, the Thai government did not officially permit unskilled workers from abroad but launched in 1992 a labor registration and permit scheme for workers from Myanmar upon the request from the Thai business circle wishing to hire migrant workers from the neighboring country<sup>55</sup>. The scheme was initially designed for a limited number of sectors in 10 provinces bordering Myanmar, but expanded its scope in 1993 to 22 provinces in the coastal region and fisheries; started in 1996 to include workers from Laos and Cambodia to 39 provinces and 7 industrial sectors; and in 2002, to all the provinces in Thailand.

In 1992, the labor permit scheme began with registration of a total of 706 Myanmar workers<sup>56</sup>. A development project, the Greater Mekong Subregion, was formed in the same year among Thailand,

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<sup>53</sup> The Harris–Todaro model defines urban expected wage as the probability of finding a job in the formal labor market in urban areas multiplied by the nominal urban wage (legal minimum wage).

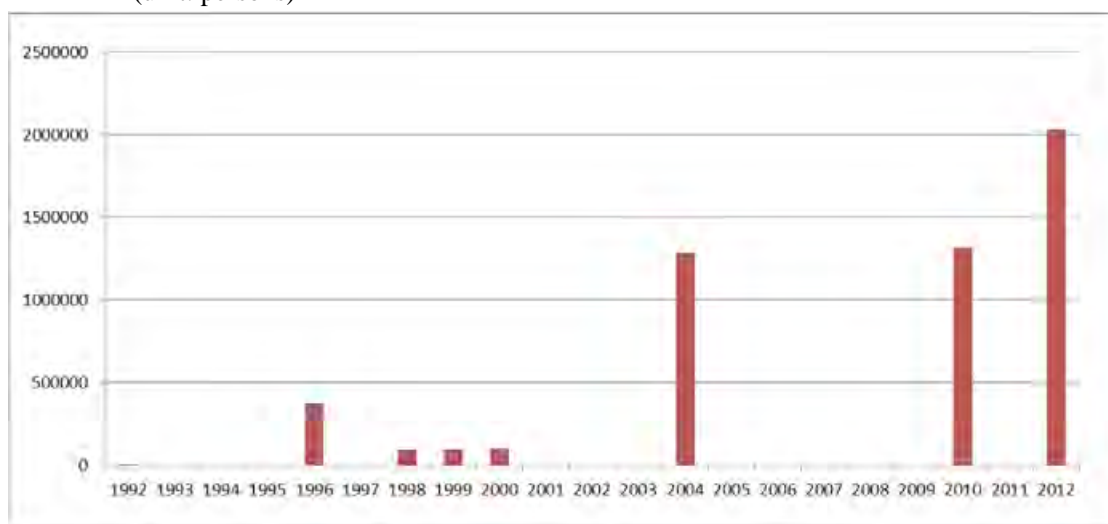
<sup>54</sup> For details see Chantavanich et al. [2007], Huguet & Punpuing [2005] and Scioritino & Punpuing [2009].

<sup>55</sup> For details of the labor registration and permit scheme, see Ito [2010] and Yamada [2009] and [2010].

<sup>56</sup> For details, see Scioritino & Punpuing [2009, 56].

Myanmar, Cambodia and Laos, coinciding programs to decentralize manufacturing plants concentrated in Bangkok and its neighboring regions to various regions. In 1996, a total of 372,000 workers from Myanmar, Laos and Cambodia were registered in the scheme, but the Ministry of Labour of Thailand estimated that there were already some 900,000 migrant workers in the country<sup>57</sup>: migration grew faster than designed by the Thai government. In 2011, registered migrant workers from the three countries totaled 2,060,756. As of the end of December 2012, foreign workers who had completed the nationality certification procedure, and legally stayed and worked in Thailand totaled 1,331,627; those who entered and worked in Thailand under bilateral memoranda of understanding (MOU) between the Thai government and governments of origin totaled 211,789. A total of 1,543,416 foreigners officially stayed and worked in Thailand. The number including those who had not yet completed the procedures required amounted to 2,030,551<sup>58</sup>.

Figure 6.1 Trends in Registered Migrant Workers from the Three Countries to Thailand  
(unit: persons)



Sources: Compiled by author based on documents and materials of the Department of Employment, Ministry of Labour, Thailand

Migrant workers chiefly engage in agriculture, fisheries, food processing, manufacturing, construction and household work: 221,000 workers in agriculture; 220,000 workers in construction; 136,973 workers in marine product processing; 129,000 workers in household labor; 65,000 workers in agricultural product processing; 56,000 workers in fisheries; 54,000 workers in food sales; and 49,000 workers in sewn product manufacturing. Another 238,000 migrant workers engage in manufacturing and processing plants unlisted above, services (restaurants, hotels and other shops, cleaning, etc.) and other industries.

<sup>57</sup> For details, see Scioritino & Punpuing [2009, 56].

<sup>58</sup> Data is based on documents and materials of the Department of Employment, the Ministry of Labour, Thailand.

Table 6.5 Number of Migrant Workers from the Three Countries to Thailand  
(as of December 31, 2012)

	Myanmar	Laos	Cambodia	Total
Total of those who have not completed nationality certification procedure	198,701	126,812	161,622	487,135
Those who have not completed nationality certification procedure *	171,227	27,793	21,438	220,458
Those who have not completed nationality certification procedure **	27,474	99,019	140,184	266,677
Those who have completed nationality certification procedure	1,179,341	34,999	117,287	1,331,627
Migrant workers under MOU	36,326	37,507	137,956	211,789
Total	1,414,368	199,318	416,865	2,030,551

\* Persons who acquired labor permits by February 28, 2010 and should have completed the nationality certification procedure by February 28, 2012

\*\* Persons who newly registered and acquired labor permits in summer 2011, and should have completed the nationality certification procedure by June 14, 2012

Sources: Compiled by author based on documents and materials of the Department of Employment, Ministry of Labour, Thailand

Myanmar workers accounted for almost 80% of the total migrant workers from the three countries. The figures in the table represent the number of workers who registered their status as migrant workers as stipulated by the Thai government: that is, it is estimated that some three million Myanmar workers and their family members stayed in Thailand, if workers who have not completed registration, those looking for jobs and their family members are taken into account. Migrant workers from Myanmar are seen across the country: the largest number, 195,000 workers, are in Bangkok, followed by 158,000 workers in Samut Sakhon Province and 66,000 workers in Chiang Mai Province<sup>59</sup>. Other than those classified in “other occupations” who accounted for 19.7%, the largest percentage, 16.6%, of Myanmar workers is in agriculture, followed by 16.2% in construction; 12% in marine product processing; and 9.4% in household work. The table shows that migrant workers engaging in fisheries accounted for a mere 3.6%, but there are quite a few fishery workers without registration and labor permits since they spend most of the time on board, so it is likely that there are a large number of Myanmar workers in fisheries who are not covered by the table<sup>60</sup>. The percentage of Myanmar workers is particularly large, compared to Lao and Cambodian workers, in marine product processing, construction materials and sewing.

<sup>59</sup> The figures of foreign workers by province are all as of 2009, according to documents and materials of the Department of Employment, the Ministry of Labour of Thailand.

<sup>60</sup> For details of Myanmar fishermen in Ranong Province, where fisheries are one of the major industries, see Fujita et al. [2013].

Table 6.6 Number of Migrant Workers from the Three Countries by Occupation  
(as of December 2009)

Occupation	Total	Myanmar			Laos			Cambodia		
		Total	Males	Females	Total	Males	Females	Total	Males	Females
Total	1,314,382	1,078,767	591,370	487,397	110,854	52,980	57,874	124,761	78,945	45,816
Fisheries	56,578	39,809	34,496	5,313	1,800	1,153	647	14,969	13,208	1,761
Marine product processing	136,973	129,773	60,477	69,296	1,180	629	551	6,020	3,044	2,976
Agriculture and husbandry	221,703	179,583	110,441	69,142	18,035	11,355	6,680	24,085	15,141	8,944
Construction	220,236	175,136	112,204	62,932	12,635	8,469	4,166	32,465	21,502	10,963
Agricultural product processing	65,305	54,993	35,408	19,585	3,677	2,209	1,468	6,635	3,930	2,705
Meat processing	8,852	7,618	4,877	2,741	792	478	314	442	296	146
Recycling	13,172	9,597	6,007	3,590	1,360	906	454	2,215	1,365	850
Mining and quarrying	1,843	1,747	1,210	537	35	20	15	61	40	21
Metal product sales	12,556	9,370	6,617	2,753	2,191	1,479	712	995	738	257
Food sales	54,225	36,668	19,378	17,290	13,074	4,833	8,241	4,483	2,262	2,221
Earthenware production/sales	5,879	4,868	2,871	1,997	322	212	110	689	432	257
Construction materials	11,441	9,142	6,337	2,805	1,296	871	425	1,003	673	330
Stone processing	3,543	3,051	2,021	1,030	263	188	75	229	153	76
Sewing	49,501	41,641	16,993	24,648	6,121	2,738	3,383	1,739	673	1,066
Plastic products	16,954	12,940	8,064	4,876	2,673	1,534	1,139	1,341	782	559
Paper products	2,569	2,031	1,256	775	399	239	160	139	81	58
Electric products	2,595	2,101	1,358	743	342	198	144	152	93	59
Transport	9,596	6,493	4,431	2,062	601	393	208	2,502	1,726	776
Wholesale, retail and mobile sales	42,814	30,471	18,604	11,867	7,565	3,994	3,571	4,778	2,895	1,883
Vehicle repair	5,631	3,979	2,839	1,140	1,276	865	411	376	261	115
Fuels and gas	3,439	2,381	1,554	827	777	518	259	281	170	111
Education and foundations	837	734	320	414	67	26	41	36	20	16
Household work	129,790	101,945	16,977	84,968	21,267	3,227	18,040	6,578	1,422	5,156
Others	238,350	212,696	116,630	96,066	13,106	6,446	6,660	12,548	8,038	4,510

Note: The figures in the table, as of December 2009, are the most useful data to see the distribution of migrant workers by occupation as they are the most detailed as official data on the number of workers by occupation. The figures are recorded by the Department of Employment, the Ministry of Labour recorded these figures as “the results of applications for work permits for foreign workers with Myanmar, Lao or Cambodian nationality who illegally entered Thailand.”

Source: Compiled by author based on Huguent & Chamratnithrongeds [2011]

Lao workers accounted for approximately 8.4% of the total migrant workers from the three countries. Females outnumbered males by some 5,000, 31% of whom worked as household servants in Thailand. By occupation, 19.1% of Lao workers were in household work, followed by 16.2% in agriculture, 11.7% in food sales, and 11.8% in others. Compared to Myanmar and Cambodian workers, the percentage of those engaging in household work was considerably high certainly because of little language barrier: the Thai and Lao languages are close to each other. The percentages of Lao workers in food sales and distribution were also high. Some 30% of Lao workers resided in Bangkok, the remaining in Nonthaburi and Pathum Thani Provinces in the central region, Chonburi Province in the eastern region and elsewhere.

Cambodian workers accounted for approximately 9.5% of the total migrant workers from the three countries. The highest percentage, 26%, of Cambodian workers engaged in construction, followed by 19.3% in agriculture; 11.9% in fisheries; and 10% in others. Compared to migrant workers from the other two countries, the percentages of Cambodian workers were high in fisheries, agriculture and construction. Another characteristic of migrant workers from Cambodia is that male workers accounted for more than 60% of all Cambodian workers in Thailand. By region, some 20,000 workers were in Bangkok, and some 50% of all in Chonburi, Rayong, Trat and other provinces in the eastern region.

## **6.6 Substitutability and Complementarity of Foreign Workers**

How do migrant workers substitute and complement Thai workers in industries with many migrant workers: agriculture, fisheries, food processing, manufacturing, construction and household work? Foreign workers in Thailand generally engage in occupations that Thai workers are unwilling to take or occupations that have been created because they are available in Thailand<sup>61</sup>.

In fisheries, chiefly Thai workers from the northeastern region used to be crewmen. Because they were unwilling to work on board for a long time and also because quite a few fishing vessels sank and crewmen were killed at the time of typhoons in early 1990, migrant workers began to replace Thai workers who were scared of risks<sup>62</sup>. In agriculture, or more specifically in the swine industry in provinces near Bangkok, migrant workers replaced Thai workers from the northeastern region who disliked working long hours while living in farmhouses<sup>63</sup>. Construction workers in Bangkok and the southern region used to be from the northeastern region, who returned and spent one-two months a year in their hometowns. Since around the financial crisis in 1997, however, construction companies started to take migrant workers from abroad instead of Thai workers who seasonally went back and forth because the former are available throughout the year<sup>64</sup>.

Household servants in Bangkok and elsewhere used to be Thai workers from the north and northeastern regions in the past, but foreign workers started to replace them in the 1990s. The Thai

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<sup>61</sup> For details, see Martin [2007, 16].

<sup>62</sup> For details, see Martin [2004, 42] and Fujita et al. [2013, 166].

<sup>63</sup> For details, see Martin [2004, 42].

<sup>64</sup> For details, see Martin [2004, 44].

government launched at one time training programs to increase the number of Thai household servants, but Thai workers are unwilling to take resident work, whereas masters are unwilling to take Thai servants because they are demanding<sup>65</sup>.

In sum, as for the occupations cited above, foreign workers have been replacing Thai workers because of the nature of occupations – that is, Thai workers were reluctant to take dangerous, difficult and dirty jobs – and also because of the preference of Thai employers to foreign workers.

According to a survey addressed to employers of agricultural, fishery, manufacturing and household workers, 60% of the respondents replied that “it is easier to deal with or manage foreign workers than Thai workers” while more than 74% of employers of household servants agreed to this statement<sup>66</sup>. A half of the respondents agreed to the statement that “foreign workers work harder than Thai workers.” In addition, some 44% of the respondents agreed to the statement that “it is good to hire foreign workers because they cost less.” To the same questionnaire, 64% of employers of agricultural workers and 69% of employers of household servants agreed. Another survey to employers on minimum wages showed that they considered that foreign workers should be paid some 80% of wages to Thai workers<sup>67</sup>. In respect of ethnicity of foreign workers, Thai employers tend to hire workers in the same ethnic groups because it is easy to manage them and because workers are arranged in terms of the same ethnic groups. In fisheries, half of migrant workers are Mon people and the majority of the rest is Burmese. The preference of particular ethnic groups is particularly conspicuous among employers of household servants: Karens and Lao are preferred because they have cultures and languages close to Thai people<sup>68</sup>.

A number of sewing plants located in Tak Province along the border to Myanmar were built in the 1990s in expectation of hiring cheap labor from Myanmar. It is also reported that, since the 1990s, the province have seen an increase in investment in production of fruits, fresh flowers and other agricultural products for export in hope of Myanmar workers crossing the border<sup>69</sup>. In Mahachai, Samut Sakhon Province, there are quite a few marine product processing plants that hire Myanmar workers more than the Thai population of the town<sup>70</sup>.

It may be true that the economic growth in Thailand gave new opportunities to Thai people who used to work in agriculture, construction and fisheries, and accelerated migration from the neighboring countries to these sectors that have the capacity to hire them. In the sense of complementarity, the inflow of migrant workers in these sectors created higher ranked jobs for Thai workers. For example, because of an abundant foreign labor supply, Thailand successfully maintained and expanded its fishing industry including shipbuilding and marine product processing and sales. Thai women started to participate in the labor market because they can hire foreign

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<sup>65</sup> For details, see Martin [2004, 48].

<sup>66</sup> For details, see ILO [2006, 55].

<sup>67</sup> For details, see Martin [2007, 19].

<sup>68</sup> For details, see ILO [2006, 55].

<sup>69</sup> For details, see Martin [2004, 42].

<sup>70</sup> For details, see Yamada [2012].

household servants<sup>71</sup>.

Thailand continued to maintain competitive strength of its labor-intensive industries such as fisheries, agriculture, marine product processing and sewn product manufacturing chiefly because plenty of labor was available outside the regulations set forth by the labor standards law. Some research have pointed out that, thanks to migrant workers from neighboring countries, labor-intensive industries managed to hire plenty of labor at low costs while keeping domestic prices of agricultural and other products low enough to control inflation and facilitated the successful shift of Thai workers to industries requiring advanced technologies<sup>72</sup>.

The Ministry of Labour of Thailand presents its views that the proportion of foreign workers to the total labor force is, at least officially, smaller than countries known as major host countries of migrant workers; that the Thai economy has been chiefly led by domestic labor force; and that a part of labor force has been supplemented by cheap unskilled labor from the three neighboring countries<sup>73</sup>.

## 6.7 Labor Market in Future

The Ministry of Labour predicts that the country will face labor shortages in 2013, estimating that some 116,000 workers will be needed to meet the demand and stating that the state of excess demand will continue for the time being<sup>74</sup>. In reality, however, the labor market is much tighter than the prediction of the Thai government<sup>75</sup>. The automobile and other manufacturing industries are already suffering skilled labor shortages<sup>76</sup>. Some observers point out that the educational level of Thai workers is not high enough to satisfy the needs both in terms of the number and quality. Industries with apparently many foreign workers such as construction, sewing, fisheries and services including accommodations are also short of labor<sup>77</sup>. Employers in construction are calling for further relaxation of requirements for employment of foreign workers<sup>78</sup>. In agriculture, too, there is a view that an expansion in hydroponic farms has increased labor demand and is accelerating labor shortages in construction and other industries. There is another view that the tight labor market in Thailand is occasioned by infrastructure projects launched by the Myanmar government that have created nearly 100,000 jobs in the neighboring country<sup>79</sup>. At the same time, because of the minimum

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<sup>71</sup> For details, see Martin [2007, 16].

<sup>72</sup> For details, see Yongyuth [2009].

<sup>73</sup> For details, see ILO [2013, 49].

<sup>74</sup> For details, see ILO [2013, 47].

<sup>75</sup> In the coming 10 years, at least 185,000 job vacancies will be available in the auto parts industry; 100,000 jobs vacancies in the electronics industry; 60,000 job vacancies in electric machinery; and 54,000 job vacancies in the metal industry. ("Severe labour shortage looms" in *The Nation* on December 19, 2012). Mega-infrastructure projects led by the Thai government also plans to create 500,000 jobs ("New govt committee to study country's labour shortage issues" in *The Nation* on April 6, 2013)

<sup>76</sup> 'Skilled labour shortage tops CEO's concerns for first half of 2013' in *The Nation* on December 12, 2012

<sup>77</sup> 'Labour shortage worries builders, developers' in *The Nation* on December 3, 2012; and 'Thai Hoteliers Wrestle with Severe Labor Shortage in and Over-Supplied Market Impacting Service Quality' in *Bangkok Post* on January 8, 2013

<sup>78</sup> The official procedures to hire foreign workers take time and cost. The authority put restrictions on types of employers and work places, which are inconvenient to both employers and workers.

<sup>79</sup> 'Construction industry faces labour shortage' in *MCOT* on October 24, 2012

wage scheme applying 300 baht nationwide, an increasing number of workers are beginning to return to their hometowns from factories in Bangkok and other industrial areas that have attracted them with higher wages<sup>80</sup>. A fisheries association proposed that the Thai government hire 50,000 workers from Myanmar, Laos, Cambodia and Bangladesh, saying that foreign workers are key to labor shortages<sup>81</sup>. In autumn 2010, the Board of Investment (BOI) granted enterprises under its investment preference scheme provisional permits to hire unskilled labor from the three neighboring countries because of the recent labor shortages, and, at the end of 2012, extended the term of employment permits although upon the condition that the enterprises concerned gradually reduce the number of unskilled workers to be hired. There are even Japanese businesses that arrange workers from the neighboring countries for plants of Japanese enterprises<sup>82</sup>.

The rise in the minimum wage embodies a policy intention to encourage the Thai economy to depart from labor-intensive industries based on low-wage labor and take off toward advanced technology industries. If low-wage labor is available, Thailand's labor-intensive industries can still survive. And if the minimum wage of 300 baht is actually paid, migrant workers from Myanmar will have higher incentives to stay in Thailand. Myanmar has long supplied its abundant labor force to Thailand under conditions below the labor standards law, but Myanmar workers are now beginning to call on Thai employers to pay fair wages.

The change in the politics of Myanmar in recent years seems to be a sign of changes in the flow of Myanmar workers to Thailand, who have contributed as cheap labor to the Thai economy<sup>83</sup>. An increase in labor demand in Myanmar will naturally reduce migration to Thailand and require changes in the Thai industrial structure. It is forecasted that Thailand's labor-intensive industries will have to relocate their plants or seek for higher productivity.

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<sup>80</sup> 'Thai foot wear industry faces labour shortage' in MCOT on March 6, 2013

<sup>81</sup> Thai fishing industry in 'labor shortage' in The Nation on January 22, 2013. The Thai labor minister suggested that the country host workers from Bangladesh as a substitute for migrant workers from the three neighboring countries, saying that Bangladeshi workers could accept harder jobs. (Bangkok Post on January 30, 2013)

<sup>82</sup> Hearings in February 2013 in Bangkok.

<sup>83</sup> For details, see Yamada [2010] and [2012a].



### **Supplementary explanation: Workers from the Northeastern Thailand to Abroad**

Migration of Thai workers to abroad started in the 1970s, sharply increased in the 1990s and, after reaching 200,000 migrants in 1995, has continued to decrease afterwards. Initially, more than 90% of Thai workers went to the Middle East, but the number fell after the Gulf War. As of 2010, 60-odd percent or almost 90,000 Thai migrant workers of all, approximately 140,000 workers, went to countries in East Asia. Of them, approximately 74,000 were males. The largest number (35,000) went to Taiwan, followed by 12,000 workers to Singapore and 9,000 workers to the Republic of Korea. Thai migrant workers abroad chiefly engage in construction, manufacturing and agriculture. Approximately 15,000 female workers went to East Asia to work: 5,000 workers to Taiwan; 3,000 workers to Hong Kong and 2,000 workers to Japan. They were hired in household work, nursing care, leisure and services<sup>84</sup>.

The Ministry of Labour published that, as of December 1, 2009, there were 218 licensed manpower agencies, of which new entries having acquired permits in the previous 10 years accounted for 44% to send low-skilled workers to East Asia, while old agencies tend to send skilled workers to the Middle East<sup>85</sup>. By sector, 70% of job posts calling for applicants were in manufacturing and construction, and 14% in services<sup>86</sup>.

Of the 218 agencies, 141 agencies are located in Bangkok; 25 in the central region; 10 in the northern region; two in the eastern region; and 40 in the northeastern region to send workers to abroad. Thai workers abroad have various issues related to wage and labor conditions. The accumulated number of those who filed complaint between 2004 and 2008 totaled 2,710, of whom 1,032 were from the northeastern region<sup>87</sup>.

As for the educational levels of Thai workers abroad, approximately 80% or 128,000 workers out of 159,566 migrant workers were graduates from primary schools; 19,000 workers were graduates from lower secondary schools. However, the number of those graduating from upper secondary schools, vocational schools and universities has been gradually increasing: in 2007, of all migrant workers abroad (161,917 workers), nearly 50% or 78,490 were graduates from primary schools; 36,585 workers were graduates from lower secondary schools; 22,601 workers were graduates from upper secondary schools; and 10,000 workers were university graduates. Still, 70% were graduates at most from lower secondary schools<sup>88</sup>.

Where domestic labor migration is concerned, the percentage of farmers from the northeastern region is reportedly 56%, higher than workers in any province or sector<sup>89</sup>.

The number of foreign workers is extremely small in the northeastern regions, compared to Bangkok or other regions. Any positive impact of employment of foreign workers stated

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<sup>84</sup> For details, see Huguet & Aphichat eds [2011, 13].

<sup>85</sup> For details, see Chantanavich et al. [2010, 14-18].

<sup>86</sup> For details, see Chantanavich et al. [2010, 19-20].

<sup>87</sup> For details, see Chantanavich et al. [2010, 92-94].

<sup>88</sup> For details, see Scioritino & Punpuing [2009, 27].

<sup>89</sup> For details, see ILO [2013, 51].

above is assumed to be relatively small in the northeastern region.

Table 6.7 Number of Migrant Workers in Northeast Thailand (2552 B.E. / 2009 A.D.)  
Number of Labor Permits Issued

	Employers	Workers/employers	Whole workers	Myanmar		Laos		Cambodia	
				(Number)	(Percentage)	(Number)	(Percentage)	(Number)	(Percentage)
The North-East	9,434	2.22	20,962	5,739	0.2738	11,616	0.5541	3,607	0.1721
Kalasin	143	2.27	325	47	0.1446	271	0.8338	7	0.0215
Khon Kaen	581	4.06	2,361	1,649	0.6984	605	0.2562	107	0.0453
Chaiyaphum	201	1.59	319	134	0.4201	119	0.3730	66	0.2069
Nakhon Phanom	639	1.33	849	15	0.0177	823	0.9694	11	0.0130
Nakhon Ratchasima	1,166	5.27	6,142	2,315	0.3769	1,647	0.2682	2,180	0.3549
Buriram	443	1.91	848	312	0.3679	177	0.2087	359	0.4233
Maha Sarakham	193	1.29	249	121	0.4859	120	0.4819	8	0.0321
Mukdahan	332	2.08	690	10	0.0145	673	0.9754	7	0.0101
Yasothon	282	1.19	336	84	0.2500	244	0.7262	8	0.0238
Roi Et	368	1.22	448	152	0.3393	268	0.5982	28	0.0625
Loei	1,058	1.71	1,804	94	0.0521	1,691	0.9374	19	0.0105
Sisaket	329	1.35	444	133	0.2995	236	0.5315	75	0.1689
Sakon Nakhon	504	1.61	813	87	0.1070	704	0.8659	22	0.0271
Surin	610	1.6	977	174	0.1781	167	0.1709	636	0.6510
Nong Khai	737	2.15	1,583	53	0.0335	1,522	0.9615	8	0.0051
Nong Bua Lamphu	191	1.39	265	42	0.1585	193	0.7283	30	0.1132
Amnat Charoen	57	1.77	101	7	0.0693	92	0.9109	2	0.0198
Udon Thani	623	1.63	1,015	181	0.1783	811	0.7990	23	0.0227
Ubon Ratchathani	977	1.43	1,393	129	0.0926	1,253	0.8995	11	0.0079

Source: Compiled by author based on documents and materials of the Department of Employment, Ministry of Labour, Thailand

## **Chapter 7 Thai Labor Market Analysis (Sampling Survey)**

### **7.1 Understanding of Domestic Labor Mobility**

We conducted a survey to clarify the characteristics of workers employed in manufacturing in Thailand. The sample questionnaire survey was addressed to individual workers at selected companies in the automobile parts and electric industries that operated factories in major industrial estates in the central and northeastern regions and the Eastern Seaboard. Questionnaire sheets were also given to these companies to gather sample opinions and comments on the characteristics of Thai workers, any impacts of corporate tax cut and a rise in the legal minimum wage on corporate earnings.

Prior to the survey, we had made a hypothesis that a fairly large proportion of workers in industrial estates across the country were migrant workers from the northern, northeastern and other agricultural regions, though the proportion might vary among the regions. We particularly assumed that quite a large number of workers from the northeastern region left their home to work in industrial estates across the country because the region had little opportunity for work and the lowest income (or revenue) per head in Thailand. We also assumed that they were sending a large proportion of money they earned to their families in their hometowns. In other words, to explain a substantial magnitude of income transfer to the northeastern region at the macroeconomic level, we suppose that such economic behaviors of migrant workers at the microeconomic level did exist universally regardless of region.

It is very difficult to gain statistical figures that can accurately perceive the mobility of workers in Thailand. The reason is that a vast majority of workers or farmers in the northern, northeastern and other agricultural regions do not change their registered residences when moving to Bangkok and other areas of capital accumulation: that is, the number of migrant workers itself is not recorded in statistics. Thus, statistics gained from registries recording residents moving in and out of regions or municipalities do not give the actual picture of mobility of migrant workers. In order to learn hometowns of migrant workers who work in industrial regions, we must obtain information about workers of private companies or conduct a sample questionnaire survey like this one. Moreover, data on income transfer – that is, the frequency and amount of money which workers send to their families in hometowns – is unavailable unless a sample questionnaire survey is conducted.

Questions in the sample questionnaire survey to workers are classifiable into the following four groups: the first group refers to the characteristics of workers themselves including the age, gender, educational background, origin and family composition. The second group is associated with employment, such as reasons for working outside their hometowns, years of service, and the amounts of salaries and bonus payments. The third group refers to the working environment, intension of job-hopping and other matters directly related to labor mobility. The fourth group sheds light on migrant workers' association with their hometowns, such as whether they send money to their families, and, if so, how much they send.

As already stated, a sharp decline in agricultural product prices in 1982 seriously hit farmers in Thailand. The impact of a fall in the agricultural price was particularly enormous in the northeastern region in which the agricultural productivity was lower than other regions. Because of economic hardship, farmers were obliged to go to Bangkok and other urban areas to find work. Most of them, however, had not completed even primary education, so were not hired in the formal labor market but had to work at lower wages that they found in the informal labor market. Because of informal employment, they were not just paid low but also outside protection under the worker protection and other labor laws, and lived unstable lives. They themselves were poor in urban areas, so had difficulty in sending money to their families in hometowns. As a result, slums expanded in urban areas, and the economic disparity between hometowns of migrant workers, the northeastern and other rural regions, and Bangkok continued to widen.

Even nowadays, the agricultural productivity in the northeastern region is relatively low compared to the central or southern region because of soil problems, lack of irrigation systems and other problems. The northeastern region did not have foreign capitals or manufacturing companies until recently, so did not share in the bounty of economic benefit called job creation. The lack of employment opportunities means that people have few opportunities to gain wage incomes. In such circumstances, the monthly average household income in 2007 in the northeastern region was 12,995 baht, the lowest among all the regions or only one third of the figure, 35,007 baht<sup>90</sup>, recorded in Bangkok and the neighboring provinces<sup>91</sup>. A low ratio of wage income to the total income also suggests the lack of employment opportunities in the northeastern region, where the figure in 2007 stood at 29.8%, lower than any regions in Thailand. In 2008, six northeastern provinces were ranked in the worst ten of the monthly average household income rankings<sup>92</sup>.

In contrast to wage incomes, the ratio of income transfer to the total household income in the northeastern region is the highest among all the regions, standing at 16.5% in 2007<sup>93</sup>. Behind this probably lies the fact that, unlike in the 1980s, changes in social environment affected farmers in the northeastern region, or more precisely, changes in educational environment since the 1990s affected the economic environment of people in the northeastern region. In fact, the number of “Opportunity Expansion Junior High Schools” in the northeastern region almost tripled in 10 years from 1,092 in 1992 to 3,243 in 2002<sup>94</sup>. Young people graduating from secondary schools for greater opportunities go and find jobs in industrial estates that have been built across the country. They are now regular workers and paid the legal minimum or higher wages and protected under various labor-related laws. Particularly since 2000, quite a few workers having completed secondary or higher education are hired in the formal labor market, receive salaries and bonus payments higher

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<sup>90</sup> *Report of the 2007 Household Socio-Economic Survey*, National Statistical Office, Ministry of Information and Communication Technology.

<sup>91</sup> The neighboring provinces refer to Nonthaburi, Pathum Thani and Samut Prakan provinces.

<sup>92</sup> The remaining four provinces were from the northern region.

<sup>93</sup> The northern region had the second highest share of income transfer to the total income, 12.91%.

<sup>94</sup> As of 2011, Opportunity Expansion Junior High Schools totaled 3,245 in the northeastern region. (Source: Office of Basic Education Commission (OBEC), Ministry of Education.)

than the legal minimum wages specified in each region, and sent a considerable portion of wages to their families in hometowns. The fact observed at the macroeconomic level that income transfer accounts for as much as 16.5% of the total household incomes in the northeastern region is none other than an aggregation of microeconomic behaviors of workers who migrated from the northeastern region to industrial estates. Therefore, this survey has been conducted for the purpose of examining if the situations observable in these macroeconomic statistics can be supported by microeconomic behaviors of workers from the northeastern or northern region who work in industrial estates in Thailand.

## **7.2 Changes in Environments Affecting Thai Workers**

The 2011 Chao Phraya River basin flood brought the Thai economy quite a few unexpected changes. It caused heavy damage to many Japanese affiliated companies, particularly those which made direct investment and did business in major industrial estates in Ayuthaya, Nakhon Pathom, Pathum Thani and other provinces in the central region. They suffered from damage not just to physical capitals such as factories, production machinery and product inventories but also to human resources in a sense that they had difficulty in managing and securing human resources. The massive flood also affected workers hired by these companies. They were faced with unstable daily lives and the uncertainty that they might lose their jobs in future. According to the KBRC (2012), the Federation of Thai Industries estimated afflicted workers at a total of 1.8 million at 838 large factories in seven industrial estates and smaller factories in industrial estates adjacent to the large industrial estates in the central region<sup>95</sup>. The damage was conspicuously serious in manufacturing: factories of electrical equipment, home appliances, automobiles, auto parts, rice milling, food processing and other sectors were forced to stop operation. The report also says that the total damage to manufacturing amounted to 171.9 billion baht.

In addition to the flood, institutional revisions – a cut in the corporate tax rate and a rise in the legal minimum wage to 300 baht per day uniformly across the country – also hit foreign companies making direct investment in Thailand. The former was put into force to alleviate tax burden of the minimum wage increase, but since the majority of foreign capitals including Japanese affiliated companies engaged in production in areas subject to corporate tax exemption or relief from the beginning, they did not in practice benefit from the cut in the corporate tax rate. Moreover, the uniform raise in the minimum wage across the country weighed on the financial standing of foreign capitals which directly invested in Thailand because of the country's cheap labor. The flood damage and institutional revisions eventually forced companies in Thailand to streamline their production process, give up labor-intensive management and seek technology- and knowledge-intensive management.

The rise in the legal minimum wage uniformly across the country appears to have impact not just on the financial standing of businesses but also on the behaviors of paid workers to some extent.

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<sup>95</sup> Kasikorn Bank Research Center (2012), *Impact from Flooding 2011 to Industrial Sectors and Thai Economy*.

This survey was conducted in June-July 2012, and the data was obtained six months ahead of the rise in the legal minimum wage, so individual questionnaire sheets do not give any picture of the direct impact on workers in industrial estates across the country. Even so, it is still possible to assume the impacts according to interviews made together with the questionnaire survey and some findings of the survey.

Various interviews made in line with the sample questionnaire survey have made it clear that workers from the northeastern region who work in industrial estates far from their hometowns have a strong desire to live and work in their hometowns if possible. The survey asked sample workers “if you wish to work in your hometown if you can find a job at a company similar to your present employer even if the salary is slightly lower than the present one.” A total of 50.8% of the respondents gave any of the following three answers – that is, (i) I strongly wish to work in my hometown; (ii) I wish to work in my hometown; and (iii) If anything, I wish to work in my hometown. The figure would certainly be much higher if the same question was asked to workers from the northeastern region.

The mechanism of domestic labor migration due to wage disparity, notably developed by Harris and Todaro (1970), explains rural-urban migration, whereby labor migration will take place from a sector with the lower value of wage rates multiplied by probabilities of obtaining employment (which is called “expected wage”) to another sector with the higher value. Labor migration typical to developing countries (though it is the same in developed countries) is the rural-urban migration hoping a higher expected urban wage than a lower rural wage. As already stated, this is the type of labor migration taking place in the 1980s in Thailand because of a sharp drop in agricultural product prices. But if the uniform legal minimum wage is applied to any part of the country, workers would lose an incentive to move from rural to urban area given that there is no difference in the probability of obtaining employment among sectors.

As stated above, the survey has clarified that a large number of workers from the northeastern region have a strong desire to return and work in their hometowns even if they are paid slightly lower than the present wage. Normally, rural price levels are lower than urban price levels, so real urban wages are not necessarily higher than real rural wages even if the nominal rural wages are slightly lower than the nominal urban wages. According to the questionnaire survey to and interviews with the management, many Japanese affiliated companies doing business in the Eastern Seaboard and the central region pay more than the legal minimum wage partly in order to retain employees at their factories. Companies in manufacturing, which has difficulty in quickly raising the labor productivity by nature, are likely to shift, to no small extent, their production bases from the Eastern Seaboard and other coastal regions to inland areas including the northeastern region. This suggests a possibility that employment opportunities will be created in the northeastern and other inland regions. If this happens, the probability of formal employment in manufacturing will increase in rural areas and an increasing number of workers will return from the Eastern Seaboard and the central region to the northeastern region. Consequently, the uniform raise in the legal minimum wage

to 300 baht will give workers more leeway to decide where to work. Thus, the uniform raise in the legal minimum wage without securing new labor supply will tighten the labor market in the Eastern Seaboard and other regions of capital concentration.

### **7.3 Analysis of Workers Using Individual Questionnaire Sheets**

This questionnaire survey, using individual questionnaire sheets, aimed to see the characteristics and outlook of workers. It was addressed to workers at 13 Japanese affiliated companies engaged in production activities in industrial estates in three selective regions, which are the central region including Ayutthaya Province that was seriously affected by the 2011 flood; the Eastern Seaboard, which has been developed since the relatively early stage and is now the country's largest industrial area; and the northeastern region, which has had only a few capital inflow from within and outside the country until recently. The number of questionnaire sheets returned totaled 678, of which 280 from the central region, 261 from the Eastern Seaboard and 137 from the northeastern region.

Table 7.1 lists workers in the manufacturing companies who replied to the questionnaire in terms of gender and hometown<sup>96</sup>. Surprisingly, almost half of the workers surveyed (330 workers) were from the northeastern region, the majority being females (231 workers). Not just in the sample manufacturers in the northeastern region in which local workers, not surprisingly, accounted for 70%, workers from the northeastern region accounted for a high proportion everywhere: 55.9% (of which females accounted for 79.5%) in the eastern region and 30.4% (54.1%) in the central region. These figures appear to reflect the reality that employment opportunities are still scarce in the northeastern region. And it is this reality that supports the hypothesis we put forward to explain labor migration in Thailand.

The survey has found that the vast majority of the workers surveyed (678 workers) were females, who accounted for 70%, and 48.7% of the female workers were from the northeastern region. The average age of the workers surveyed was 29.5 in all the three regions, though there was slight difference among the regions. The ratio of married workers (54.7%) was slightly higher than that of unmarried ones (44.5%). In sum, the most common worker in the regions was a female worker aged between the late 20s and the early 30s from the northeastern or other region where main industry is agriculture.

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<sup>96</sup> By occupational type, general workers accounted for 63.1% of all workers surveyed; supervisors of production lines 13.1% and clerical workers 10.5%.

Table 7.1 Genders and Hometowns of Workers

		Total	Bangkok	Central region	Northeastern region	Southern region	Northern region	Unknown
Total	No. of people	678	9	169	330	5	97	68
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Males	No. of people	189	6	48	93	2	27	13
	%	27.9%	66.7%	28.4%	28.2%	40.0%	27.80%	19.1%
Females	No. of people	474	3	115	231	3	69	53
	%	69.9%	33.3%	68.0%	70.0%	60.0%	71.10%	77.9%
Third gender	No. of people	6	0	2	2	0	1	1
	%	0.9%	0.0%	1.2%	0.6%	0.0%	1.0%	1.5%
Unknown	No. of people	9	0	4	4	0	0	1
	%	1.3%	0.0%	2.4%	1.2%	0.0%	0.0%	1.5%

Source: Created by the author based on the individual questionnaire sheets

In terms of sibling status, the ratio of the first children was the highest, 30.8%, followed by the youngest children, 29.1%. The ratio of youngest children was conspicuously high from the answers of the questionnaire conducted in the northeastern region. This is mostly attributable to the social practice in the region that the youngest daughter commonly cares her old parents and acts as their heir. In fact, Japanese affiliated companies surveyed in industrial estates in the northeastern region had quite a few workers having the sibling status as the youngest children. This reflects the actual situation where the eldest sons and daughters, after graduating from secondary schools, work in industrial estates in the Eastern Seaboard and the central region and send money to their families in hometowns, while the youngest children in hometowns are locally educated until graduation of secondary school and find jobs at local companies in good standing.

As for the educational background, the highest proportion, some 40%, of the workers surveyed were graduates from upper secondary schools, and followed by those graduating from technical and advanced vocational schools or universities<sup>97</sup>. Among the three regions surveyed, workers in the central region had the highest educational backgrounds: workers graduating from technical and advanced vocational schools or universities outnumbered those graduating from upper secondary schools, accounting for half of the workers surveyed in the central region. On the contrary, workers surveyed in the Eastern Seaboard had the lowest educational background: those graduating from lower and upper secondary schools accounted for 60%, whereas the ratio of those graduating from technical and advanced vocational schools or universities was the lower than the ratio in the other two regions surveyed.

Wongboonsin (2004) suggests that the present academic structure of Thai workers fails to match

<sup>97</sup> Somewhat high educational backgrounds may be attributable to sample companies surveyed, which were all Japanese affiliated companies in manufacturing. The average educational level is generally lower among workers hired by local companies.



labor demand in manufacturing<sup>98</sup>, in that employers in the manufacturing companies wish to hire workers with skills acquired at vocational schools, rather than university graduates. As pointed out in Chapter 6, employers in manufacturing wish to hire not highly educated workers but workers have skills necessary on site. Workers will be more and more expected to have the basic skills and knowledge, which the same level as acquiring in the vocational school, and potentials to acquire further skills and knowledge through on-the-job training or work process. Not a few managers interviewed in this survey commented that few workers committed themselves to development of their skills and knowledge through production and other work processes. Because of such circumstances, the majority of the companies surveyed stated that they were short of engineers with the basic skills. Without human resource development of engineers and technical workers graduating from the upper secondary schools or higher educational institutes or “specialized in engineering”, Thailand’s domestic labor market will be inevitably tighter.

Where years of service are concerned, 40% of the workers surveyed in the Eastern Seaboard had work experience of six months or less, the shortest among all the regions surveyed. On the other hand, some 40% of workers in the northeastern region and 36% of those in the central region replied that they had worked for the same factories for five years or longer.

Asked why they started to work for the present company, more than half of the workers surveyed in the central region and the Eastern Seaboard replied that they “found the job on a job advertisement on newspaper or magazine, or a job vacancy notice posted at the entrance to the factory.” The second largest proportion of the workers surveyed found the job through relatives and friends. It is interesting that, on the other hand, some 60% of the workers surveyed in the northeastern region relied that they “found the job through a family member, relative or friend.”

Labor market brokerage services are available to factory workers, but the data shows that few workers did not use such services. The survey revealed that the vast majority of factory workers in manufacturing found the job on their own or through family members and relatives. A noteworthy fact is that job advertisements on boards at the entrances to factories and companies played an important role for job searching. It seems likely that, while a certain number of workers looked at such advertisements themselves and applied for vacancies, not a few workers are given job information by their acquaintances, family members and relatives who happen to see such advertisements. The survey has found that most workers in industrial estates who experienced job-switching did move within the same industrial estates or to neighboring industrial estates. For this, there may be two possible reasons: one is that job advertisements are distributed within a fairly limited area only, and the other is that skills are not company-specific but often common to several factories within the same industrial estates, though it depends on regions or components of industrial estates. The commonality of skills in a region or an industrial estates enables workers to change jobs among factories in the same industrial park or in the neighboring industrial parks on one hand, and,

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<sup>98</sup> Wongboonsin, Kua, (2004), *Desirable Skills of the Future Thai Labor*, College of Population Studies, Chulalongkorn University.

on the other, puts a restriction of the extent to which a worker can move for job-hopping.

As for wage levels, workers surveyed in the central region were paid higher than those in the other two regions on average, though workers in the Eastern Seaboard were paid the highest bonus on average. A noticeable finding is that workers in the Eastern Seaboard sent the largest amount of money to their families among those in the three regions surveyed. Workers surveyed in the northeastern region received the smallest amounts of monthly salaries and bonus payments and sent the smallest amount to their families. On average, some 85% of all the workers surveyed in the three regions sent money to their families in their hometowns, the average amount totaling half of their salaries. This fact almost perfectly supports the hypothesis that we formulated to corroborate the macroeconomic statistics of the ratio of income transfer in the northeastern region.

#### **7.4 Analysis on Labor Mobility**

Labor mobility is conceptually classifiable into the following six categories<sup>99</sup>: (1) occupational mobility; (2) mobility in the same industry; (3) mobility to a different industry; (4) migration; (5) mobility from unemployment to employment, and vice versa; and (6) entry to and exit from labor force population. We conducted a comprehensive survey, using individual questionnaire sheets, to shed light on the actual situation of labor mobility falling under categories (1) to (4).

This section analyzes the determinants of labor mobility. More specifically, we conduct a regression analysis on the direction and significance of correlations between attributes obtained from questionnaire sheets – age, gender, rank order in family, wage level, employment pattern, educational level and other factors – and the degree of desire to move to a different company or change the job to work in hometown. By examining the results of the regression analyses, we attempt to statistically elucidate issues of labor mobility, such as what is the crucial determinant for workers to give up the present jobs and find new ones, and whether the crucial determinant varies among regions.

Of all the workers surveyed with questionnaire sheets in the three regions, 45% replied that they did not wish to move from the present workplace, and 35% replied that they wished to move from the present workplace. Thus, in the three regions as a whole, workers not wishing to change jobs outnumbered those wishing to change jobs.

Let us have a look at willingness to change jobs in each region. Workers replying that they wished to change jobs in the central region totaled 114, the same as the number of those who did not wish to change jobs. In the Eastern Seaboard, more than half of the workers surveyed replied that they did not wish to change jobs, and the ratio of those who replied that they did not wish to change jobs stood at 25%, the lowest among the three regions surveyed. The survey has already given a picture of regional characteristics of workers: a conspicuous characteristic of workers in the Eastern Seaboard is the low ratio of those who did not wish to change jobs. On the other hand, we gained more or less the similar replies from workers in the northeastern and central regions: that is, the ratio

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<sup>99</sup> Bakke, Wight E., et al. (1954), *Labor Mobility and Economic Opportunity*, MA. : MIT Press.

of those replying that they wished to change jobs was roughly the same as the ratio of those replying that they did not wish to change jobs. The rates were 39% in the northeastern region and 35% in the central region.

We conducted a multiple linear regression analysis to find the relationship between workers' desire for job-switching and the most crucial determinant for job-switching. The analysis set the "degree of eagerness to change jobs" as the dependent variable and six attributes – that is, gender, age, family structure, educational level, years of service, and wage level (monthly salary) – as explanatory variables. The survey, however, does not follow the standard process of quantitative analyses: we did not conduct a series of a quantitative analysis, in which the mechanism of labor mobility is modeled, and the quantitative model is formulated based on the relevant theory, and a hypothesis is verified with estimated parameters. It should be noted that the analysis is a mere regression analysis to see the correlation between the data on individual attributes from questionnaire sheets and intentions to change jobs.

Table 7.2 Degree of Desire to Change Jobs

		Total	A	B	C	D	E
Total	No. of people	678	234	117	303	4	20
	%	100.0	34.5	17.3	44.7	0.6	2.9
Central region	No. of people	280	114	52	114	0	0
	%	100.0	40.7	18.6	40.7	0.0	0.0
Eastern Seaboard	No. of people	261	66	45	142	2	6
	%	100.0	25.3	17.2	54.4	0.8	2.3
Northeastern region	No. of people	137	54	20	47	2	14
	%	100.0	39.4	14.6	34.3	1.5	10.2

Note: A: Strongly desire to change jobs; B: Neither; C: Do not wish to change jobs; D: Invalid reply; E: Unknown  
Source: Created by the author based on the individual questionnaire sheets

Table 7.3 shows the results of the regression analysis. The influences of variables in each region are presented in a column, and the figures are the values of individual parameters<sup>100</sup>. The parameters highlighted in green are statistically significant<sup>101</sup>. The table suggests that three explanatory variables – age, wage level and educational level – were found to be statistically significant. Variables "age" and "wage level" are negatively correlated to the desire to change jobs. The values for variable "wage level" suggest that the incentive to change jobs will fall if the present wage increases. As for age, it is generally believed that a worker faces worse conditions for job-switching as he gets older. The incentive to change jobs appears to fall also because the older workers are more likely to be married and opt to live a stable life, rather than focusing on the absolute wage level. In

<sup>100</sup> We used a simple linear regression. It should be noted that the values of the parameters are not elastic because the model is not in the log-linear form.

<sup>101</sup> The Report uses the 5% statistically significant level from both ends.

contrast, the variable “educational level” exhibits a positive correlation with the desire to change jobs: this appears to explain that workers with higher education tend to see their future possibility more positively and wish to get the best possible job.

Table 7.3 Correlations with Job-Switching (multiple regression)

		Total	Central region	Eastern Seaboard	Northeastern region
Value of the parameter	Gender	0.068	0.061	0.121	0.086
	Age	-0.159	-0.163	-0.151	-0.221
	Family structure	-0.025	-0.06	-0.02	-0.005
	Educational level	0.224	0.210	0.268	0.078
	Years of service	-0.073	-0.144	-0.084	-0.093
	Wage level (Monthly salary)	-0.150	-0.169	-0.174	-0.149

Source: Created by the author based on the individual questionnaire sheets

We performed a regression analysis on each region and have found that two explanatory variables “wage level” and “educational level” are statistically significant factors affecting the desire to change jobs in two regions, that is, the central region where individual questionnaire sheets were given to companies in the automobile parts industry and the electric industry, and the Eastern Seaboard where questionnaire sheets were given to companies in the automobile parts industry.

Another regression analysis using two explanatory variables for “educational level” – that is, “regular education” and “vocational education” – has obtained interesting findings. Table 7.4 shows the results of the analysis on “workers receiving regular education” and “workers receiving vocational education.” The figures in the table are parameters, and those highlighted in blue are found to be statistically significant. For the former, two explanatory variables “educational level” and “wage level” are statistically significant factors affecting the desire to change jobs, and, for the latter, explanatory variables “age” and “wage level” are statistically significant factors. Major reasons for workers to wish to change jobs are (1) “wish to move to a workplace with a higher wage or better welfare schemes” (54.0%); (2) “wish to move to a workplace with good human relationships” (10.2%); and (3) “wish to return to hometown” (10.2%).

In recent years, people in Thailand are increasingly eager to seek higher education. Higher education workers are generally paid more: many people spare no effort to gain the higher education if possible. In such social circumstances, regular education which gives students chances to go to university and other higher education is more competitive than vocational education in Thailand. Thus, workers graduating from upper secondary schools, compared to graduates from vocational schools, are believed to be more sensitive to wage levels and other factors, and job-hopping, in search for demonstration of higher performance.

Table 7.4 Regression Analysis by Educational Level

	<b>Graduates from vocational schools</b>	<b>Graduates from secondary schools</b>
Gender	0.133	0.039
Age	-0.263	-0.12
Family structure	-0.099	0.006
Educational level	0.031	0.259
Years of service	-0.148	-0.043
Wage level (Monthly salary)	-0.283	-0.199

Source: Created by the author based on the individual questionnaire sheets

The analyses performed so far enable us to envisage workers eager to change jobs and their characteristics: they are relatively young, unmarried and highly educated workers who graduated from upper secondary schools or universities. Workers highly motivated to change jobs with less than six months of service are often seen in the Eastern Seaboard. They are considered to be “job hoppers,” workers who briefly work in one position after another, looking for higher wages. Even if employers train them, they quickly leave the companies, so employers tend to refrain from hiring them. The survey has found that quite a few workers in Thailand find jobs through human relationships with, for example, acquaintances and relatives who work for the companies they are interested in. It is sometimes possible find a job on job advertisements in the newspaper, but the most common source of employment information is colleagues and relatives working in factories.

Certainly the situation of the demand side in the labor market is a factor significantly affecting job-hopping of workers in Thailand. In short, excess labor demand induces job-hopping. Workers would not voluntarily change jobs if there were few opportunities for work. Most of the job-hopping observable in the individual questionnaire sheets for the survey were for higher wages, rather than in search for work itself. In fact, in 2012, the domestic labor market exhibited full employment in Thailand, but the survey clearly shows that many workers still expressed their desire to change jobs. This reflects the fact that the workers did not find the present jobs to be steady and stable ones worth having for their entire careers. If employment were scarce and involuntary unemployment existed in the labor market, unemployed workers would focus on finding a job and, once having had one, would not attempt to voluntarily change jobs as workers in present-day Thailand. Currently, in the Eastern Seaboard and other regions with capital accumulation, excess labor demand leads to a tight labor market and a rise in wages as the prices of labor, so workers are paid more than the legal minimum wage.

## Chapter 8 Comparative Static Analysis in a Simple Neo-Classical Model

### 8.1 Assumption and Model

This chapter provides some comparative static analyses of the Thai economy in a simple two-sector neoclassical model. Let us put the Thai economy in a two-sector model where Bangkok and its surrounding area are the “urban sector” (Sector 2) and the northern and northeastern regions are the rural sector (Sector 1), and formulate the economy with neo-classical production functions. To formulate the model, we suppose that capital and labor endowments which used as production factors are given as exogenous variables, while the employment levels of capital and labor in both sectors and nominal wage in rural sector are determined from the model. The nominal wage in the urban sector is assumed to be given as an exogenous variable. This assumption reflects the reality that most of the workers hired by manufacturing companies in industrial estates in Bangkok and its surrounding areas are paid the legal minimum wage.

We first analyze impacts of changes in the two production factor endowments, capital and labor, on labor employment in both sectors and the nominal wage in the rural sector. An increase in capital stock endowment is considered to be an increase in foreign direct investment (FDI), and an increase in labor endowment to be an increase in inflow of foreign workers, irrespective of legal or illegal immigration, from CLM countries. Following the above analysis, we discuss impacts on the economy of a wage policy, whereby the nominal wages in both rural and urban sectors are exogenously set to be the same level. This specifically examines impacts on the Thai economy of the raise in January 2013 in the legal minimum wage to 300 baht uniformly across the country. We adopt the comparative static approach to all these analyses.

Let us now define the variables and describe the model to be used in the analyses. The natures of neo-classical production functions and a number of assumptions necessary for formulation of the model and analysis are set out. First, suppose that the economy in the model is a dual economy comprising the rural sector (Sector 1) and the urban sector (Sector 2). The former represents agricultural regions such as the northern and northeastern regions, and the latter the Bangkok and its surrounding areas. Both the sectors have the common production factors, capital  $K$  and labor  $L$ , to engage in production activities independently of each other. Suppose, however, that the endowments,  $\bar{K}$  and  $\bar{L}$ , of the country are exogenously given.

The rural sector produces agricultural products according to the production function (8.1), where  $L_1$  is labor input in Sector 1,  $K_1$  is capital in Sector 1 and  $X_1$  is production volume of agricultural products. In the urban sector (Sector 2), on the other hand, relatively capital-intensive manufacturers engage in production activities. Their production function is given by (8.2), where  $L_2$  is labor input in Sector 2,  $K_2$  is capital in Sector 2 and  $X_2$  is production volume of manufactured products. Let  $k_1$  and  $k_2$  denote the capital-labor ratios in Sectors 1 and 2, respectively. Thus,  $k_1 = K_1/L_1$  and  $k_2 = K_2/L_2$ . Suppose in this analysis that the quantitative factor intensity condition,  $k_2 > \bar{k} > k_1$ , is satisfied. In addition, since both the sector's production

functions are adopted for neo-classical ones, these have constant returns to scale and thus must be homogeneous functions of degree 1 in inputs of production factors.

Next, suppose that the production factors are fully employed in both sectors. This assumption means that there is no idle capital and all the workers are fully employed in Thailand. Full employment of labor particularly reflects the fact that the unemployment rate in Thailand has been below 1% in recent years. Full employment of the production factors are thus expressed by equations (8.7) and (8.8).

Suppose that, in the model, individual economic agents in the sectors, households and firms, seek to realize their subjective equilibria<sup>102</sup>. Thus, the first-order condition of profit maximization in the rural sector is given by (8.3) and that in the urban sector is given by (8.4), where  $w_1$  and  $w_2$  are nominal wages in Sectors 1 and 2, respectively.  $p$  denotes the relative price of Good 2 in terms of the price of Good 1, and thus  $p = P_2/P_1$ . Suppose that nominal wage in Sector 2 (urban sector),  $\bar{w}_2$ , is constant and greater or equal to nominal wage in Sector 1 (rural sector),  $w_1$ . This assumption reflects the fact that urban wage is given by the legal minimum wage and is higher than the legal minimum wage in rural regions or wages paid in informal sectors. This wage relationship is given by (8.6).

The conditions for subjective equilibria for capital in the sectors are given by  $r_1 = f'(k_1)$  and  $r_2 = p f'(k_2)$ , respectively, where  $r_1$  and  $r_2$  are nominal capital rentals in Sectors 1 and 2, respectively. Suppose here that capital freely moves between the sectors but stops moving when the capital rentals in the sectors become equivalent<sup>103</sup>. On the assumption that the latter situation is an equilibrium, the equilibrium condition is given by (8.5).

The system of the model is completed as shown above, where four exogenous variables ( $\bar{K}$ ,  $\bar{L}$ ,  $p$  and  $\bar{w}_2$ ) simultaneously determine eight endogenous variables ( $X_1, X_2, L_1, L_2, k_1, k_2, w_1$  and  $\alpha$ ) according to eight independent equations (8.1) to (8.8). Now let us use a flowchart of the model to confirm the determinant relationships among the variables<sup>104</sup>. If the legal minimum wage in the urban sector  $\bar{w}_2$  and the relative price of goods  $p$  are put in the conditions of subjective equilibria in labor and capital, (8.3), (8.4) and (8.5), the values of three endogenous variables ( $k_1, k_2$  and  $w_1$ ) are uniquely determined all at once. And if the capital-labor ratios of each sector,  $k_1$  and  $k_2$ , are put in the equations representing full employment of capital stock and labor, (8.7) and (8.8), the employment levels in the sectors ( $L_1$  and  $L_2$ ) are determined. Then if  $k_1$  and  $L_1$ ,

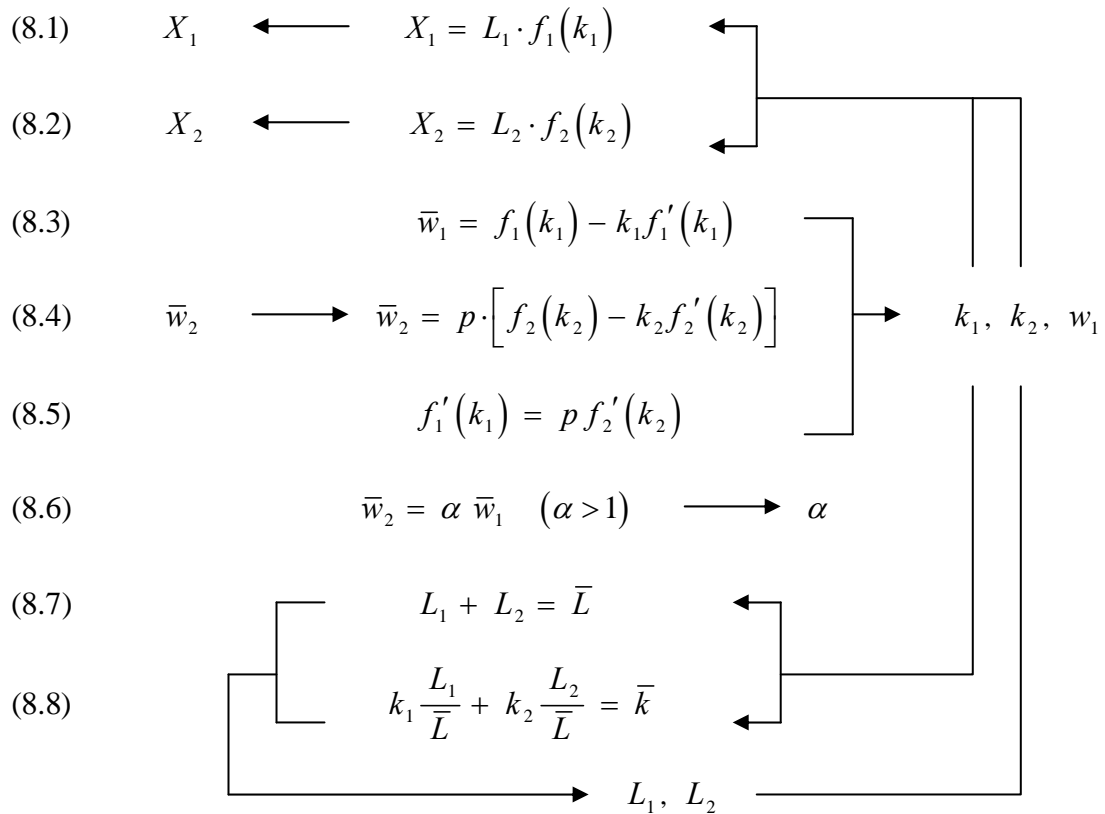
<sup>102</sup> Utility maximization of households is implicitly assumed in the demand side of the model. A two-sector neo-classical model is a system where 16 equations including those defining the capital-labor ratios of the sectors determine 15 independent variables. An arbitrary one equation out of the 16 equations is not independent according to Walras's law, so the system in practice determines 15 variables with 15 equations. The demand side of the system is comprised of demand functions of two goods, budget constraint and an income equation. Thus, utility maximization of households is performed when demand functions of the two goods are derived.

<sup>103</sup> The assumption that capital stock freely moves between the sectors suggests that the analysis is based on a long or ultra-long term perspective. A short or medium term analysis cannot allow physical movement of capital among the sectors, but will desirably use a Specific Factor Model.

<sup>104</sup> Because the model is a system where eight independent variables are simultaneously determined according to eight independent equations, one cannot mathematically identify which equation determines which variable. In this sense, the flowchart here simply presents the determinant relationships in the economic sense.

and  $k_2$  and  $L_2$  are put in the production functions, (8.1) and (8.2), respectively, outputs of Good 1 and 2 ( $X_1$  and  $X_2$ ) are determined. If nominal wage in Sector 1  $w_1$  which is determined under the profit maximization condition of firms and exogenous nominal wage in Sector 2 (legal minimum wage) are put in equation (8.6), the value of  $\alpha$  ( $\alpha \geq 1$ ), the wage gap between the sectors, is determined.

Figure 8.1 Flowchart of the Model



## 8.2 Comparative Statics for Increase in Capital Stock Endowment

Since 1988, FDI sharply increased in Thailand. At the time, quite a few and various industrial estates were built in the neighboring areas of Bangkok, Eastern Seaboard, Ayutthaya industrial area and elsewhere and became the destination of such direct investment from abroad. The model views the acceptance of direct investment as an increase in capital stock endowment in Thailand. Then how does an increase in capital stock endowment affect the employment levels of labor in the urban and rural sectors? Does an increase in capital stock in the urban sector affect nominal wage in the rural sector? This section attempts to find the answers to these questions through a comparative static analysis of impacts of an increase in capital stock endowment on the employment volumes of labor in the sectors and nominal wage in the rural sector ( $L_1, L_2$  and  $w_1$ ).



Equations (8.7) and (8.8) give

$$(8.9) \quad \begin{bmatrix} 1 & 1 \\ k_1/\bar{L} & k_2/\bar{L} \end{bmatrix} \begin{bmatrix} L_1 \\ L_2 \end{bmatrix} = \begin{bmatrix} \bar{L} \\ \bar{k} \end{bmatrix}.$$

We find from (8.9) that  $L_1$  and  $L_2$  are given by

$$(8.10) \quad L_1 = \frac{\bar{L}}{k_2 - k_1} \cdot (k_2 - \bar{k}), \quad L_2 = \frac{1}{k_2 - k_1} \cdot (\bar{k} - k_1).$$

Differentiating  $L_1$  and  $L_2$  with respect to  $k$ , we obtain

$$(8.11) \quad \frac{dL_1}{dk} = -\frac{\bar{L}}{k_2 - k_1} < 0, \quad \frac{dL_2}{dk} = \frac{\bar{L}}{k_2 - k_1} > 0. \text{ }^{105}$$

Equation (8.11) suggests that, if FDI increases and labor endowment is constant or an increase in FDI is relatively greater than an increase in labor endowment, then the capital-labor ratio  $\bar{k}$  will increase. This will decrease the employment level of labor in Sector 1 or the rural sector and, on the other hand, increase the employment level of labor in the urban sector, that is, Bangkok and its surrounding areas and other manufacturing areas.

Differentiating equations (8.1) and (8.2) with respect to  $k$ , impacts of an increase in FDI on production volumes in the sectors can be expressed by

$$(8.12) \quad \frac{dX_1}{dk} = \frac{-\bar{L}}{k_2 - k_1} \cdot f_1(k_1) < 0, \quad \frac{dX_2}{dk} = \frac{f_2(k_2)}{k_2 - k_1} > 0. \text{ }^{106}$$

Equation (8.12) suggests that an increase in FDI increases output of capital-intensive industries such as manufacturing in the urban sector and decreases output of labor-intensive industries such as agriculture in the rural sector. This corresponds to the fact that the ratio of manufacturing to GDP increased and that of agriculture fell since 1988 when FDI increased in Thailand. It is also interesting that the finding of the equation is the very idea of the Rybczynski theorem which is derived from the Heckscher-Ohlin-Samuelson model (hereinafter called the ‘‘HOS model’’) <sup>107</sup>.

Let us now consider impacts of an increase in capital stock on nominal wage in the rural sector (Sector 1),  $w_1$ . Differentiating  $w_1$  with respect to the factor endowment ratio (capital-labor ratio)  $k$  of the entire country, we obtain

<sup>105</sup> The sufficient condition of these results is that the qualitative factor intensity condition ( $k_2 - k_1 > 0$ ) is satisfied.

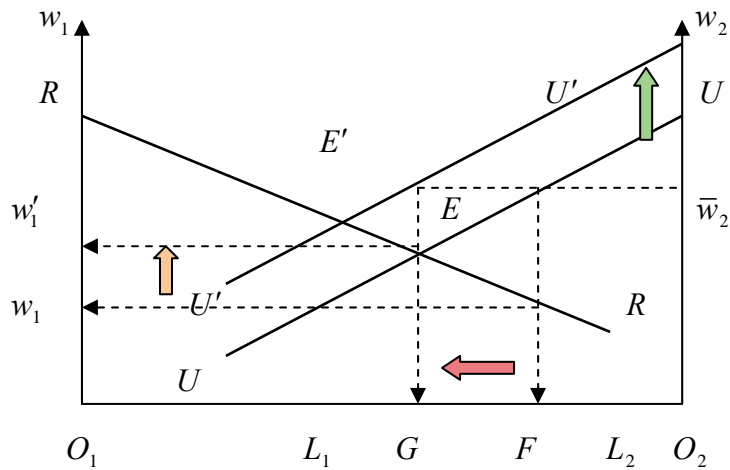
<sup>106</sup> ditto

<sup>107</sup> For the Rybczynski Theorem, see Rybczynski, T. N. (1965), ‘‘Factor Endowments and Relative Commodity Prices,’’ *Economica*, Vol. 22, pp. 336-341.

$$\begin{aligned}
(8.13) \quad \frac{dw_1}{dk} &= \frac{dw_1}{dL_1} \cdot \frac{dL_1}{dk} = \frac{k_1(k_2 - k_1)^2 \cdot f_1''(k_1)}{\bar{L} \cdot (k_2 - \bar{k})} \cdot \frac{-\bar{L}}{(k_2 - k_1)} \\
&= - \frac{k_1(k_2 - k_1) \cdot f_1''(k_1)}{(k_2 - \bar{k})} > 0. \text{ }^{108}
\end{aligned}$$

Equation (8.13) suggests that an increase in FDI prompts workers to move to capital-intensive industries such as manufacturing in the urban sector, leading to a decrease in the employment level of labor in the rural sector. As a result, marginal productivity of labor in agricultural production rises and nominal wage in the rural sector  $w_1$  also rises according to the subjective equilibrium condition of the producers.

Figure 8.2 Case of Capital Inflow



The above comparative static analysis can be graphically explained as in Figure 8.2, a box diagram presenting the two-sector economy. The values of nominal wage and the marginal product value are presented on the vertical axis and the labor amount on the horizontal axis. Thus, the length of the base presents the amount of labor endowment in the economy. The coordination origin of the rural sector (Sector 1) is denoted  $O_1$  and that of the urban sector (Sector 2) is denoted  $O_2$ . Now the curves of marginal product of value of labor in each sector is depicted as a downward-sloping curve.  $RR$  is the marginal product value curve of agricultural production in the rural sector, and  $UU$  is the marginal product value curve of manufacturing production in the urban sector.  $RR$  and  $UU$  intersect at  $E$ . The horizontal coordinate of  $E$  is denoted  $G$ . Nominal wage in the urban sector  $\bar{w}_2$  is constant, so the employment level of labor in the urban sector is determined

<sup>108</sup> It is also assumed here that the qualitative factor intensity condition is satisfied and that  $f_j''(k_j) < 0$  ( $j = 1, 2$ ), decreasing marginal productivity, because the neoclassical production function is used.

according to the subjective equilibrium condition of firms and expressed by  $O_2F$ . The employment level of labor in the rural sector is expressed by  $O_1F$ , which is obtained by subtracting  $O_2F$  from total labor endowment,  $O_1O_2$ , because of the supposition that the economy has no unemployment. The diagram indicates that the nominal wage in the rural sector  $w_1$  is lower than that in the urban sector  $\bar{w}_2$ .

If FDI increases and capital accumulates in the urban sector, then capital stock to be injected in the production function of manufacturing in the urban sector increases. This raises the productivity of manufacturing and shifts the marginal product value curve of manufacturing  $U'U'$  upwards. Since the urban wage  $\bar{w}_2$  is fixed, the horizontal coordinate of the intersection of  $U'U'$  and  $\bar{w}_2$  is  $G$ , so the employment level of labor in the urban sector is expressed by  $O_2G$ . In other words, an increase in capital stock generates more employment of labor ( $GF$ ) in the urban sector. Meanwhile, because part of labor force in the rural sector expressed by  $GF$  has moved to the urban sector, the employment level of labor in the rural area falls and thus the marginal productivity of agriculture rises. Consequently, according to the subjective equilibrium condition of producers in the rural sector, the nominal wage in the rural sector rises from  $w_1$  to  $w'_1$ .

### 8.3 Comparative Statics for Increase in Labor Endowment

Let us now turn to a case where capital stock is constant and labor force increases or where the margin of an increase in labor force is greater than that of an increase in capital stock. The case is considered massive inflow of workers, regardless of legal and illegal immigration, from neighboring Cambodia, Laos and Myanmar and elsewhere<sup>109</sup>.

A large number of foreign workers – chiefly from Cambodia, Laos and Myanmar (collectively called CLM countries) – come to and work in Thailand. In particular, three to four million workers reportedly flow legally and illegally from Myanmar to Thailand. The model views the inflow of workers as an increase in labor endowment  $\bar{L}$  in the country. Then how does an increase in labor endowment affect the employment levels of labor in the urban and rural sectors? Does it also affect nominal wage in the rural sector? This section attempts to find the answers to these questions through a comparative static analysis of impacts of an increase in labor endowment on the employment levels of labor in the sectors and nominal wage in the rural sector  $w_1$ .

Differentiating equation (8.10) with respect to  $\bar{L}$ , we obtain

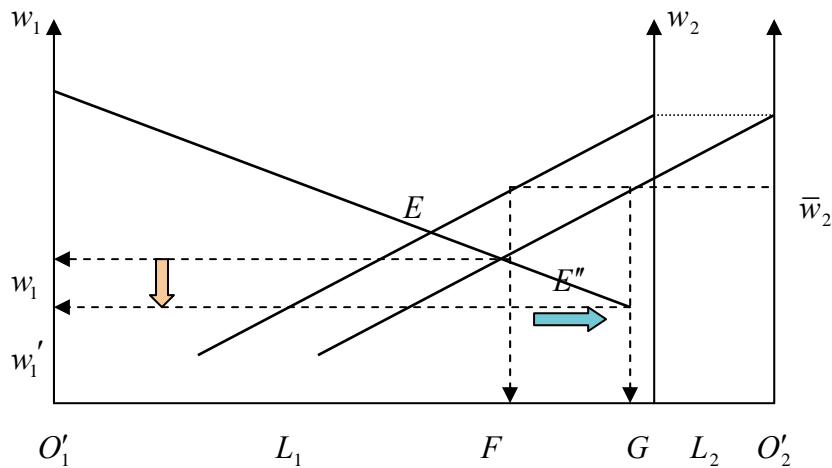
$$(8.14) \quad \frac{dL_1}{d\bar{L}} = \frac{(k_2 - \bar{k})}{(k_2 - k_1)} + \frac{\bar{L}}{(k_2 - k_1)} \cdot \left( - \left( \frac{-\bar{K}}{\bar{L}^2} \right) \right)$$

<sup>109</sup> The official country names are the Kingdom of Cambodia, the Lao People's Democratic Republic and the Republic of the Union of Myanmar, but for convenience the paper calls them Cambodia, Laos and Myanmar, respectively.

$$\begin{aligned}
&= \frac{k_2}{k_2 - k_1} > 0. \text{ and} \\
(8.15) \quad \frac{dL_2}{dL} &= \frac{(\bar{k} - k_1)}{(k_2 - k_1)} + \frac{\bar{L}}{(k_2 - k_1)} \cdot \left( -\frac{\bar{K}}{\bar{L}^2} \right) \\
&= \frac{-k_1}{k_2 - k_1} < 0.
\end{aligned}$$

The two equations suggest that an increase in labor endowment increases the employment level of labor in labor-intensive industries such as agriculture, and decreases that in capital-intensive industries such as manufacturing in the urban sector<sup>110</sup>.

Figure 8.3 Case of Labor Inflow



The analysis can be graphically explained as in Figure 8.3. In this box diagram, the length of the base extended from  $O_1O_2$  to  $O'_1O'_2$  presents the increase in labor endowment. Because the marginal product value curves in the two sectors remain unchanged, the extension of the base shifts the intersection of the curves from  $E$  to  $E''$ . While nominal wage in the urban sector  $\bar{w}_2$  is constant, the shift of the marginal product value curve to the right due to the parallel shift of the vertical axis produces an effect as if capital stock fell in the production function in the urban sector. This causes a fall in the employment level of labor in the urban sector. As the diagram shows, the employment level of labor in the rural sector increases by  $FG$ .

Let us now investigate the relationship between nominal wage and employment levels in the rural sector (Sector 1) when labor endowment increases. Differentiating nominal wage in the rural sector

<sup>110</sup> These findings are identical to the Rybczynski Theorem in the HOS model.

$w_1$  with respect to labor endowment  $L$ , we obtain

$$\begin{aligned}
 (8.16) \quad \frac{dw_1}{dL} &= \frac{dw_1}{dk} \cdot \frac{dk}{dL_1} \cdot \frac{dL_1}{dL} \\
 &= -\frac{k_1(k_2 - k_1)f_1''(k_1)}{(k_2 - \bar{k})} \cdot \left(-\frac{(k_2 - k_1)}{\bar{L}}\right) \cdot \left(\frac{k_2}{(k_2 - k_1)}\right) \\
 &= \frac{k_1 k_2 (k_2 - k_1) f_1''(k_1)}{(k_2 - \bar{k}) \cdot \bar{L}} < 0.
 \end{aligned}$$

An increase in labor endowment increases the number of workers hired in the rural sector, so the marginal productivity of labor in agriculture falls and the nominal wage in the sector also falls due to the subjective equilibrium condition of producers. Figure 8.3 shows this effect as a shift from  $w_1$  to  $w_1'$ . The analysis thus has revealed that an increase in labor endowment in the economy expands the employment levels of labor in the rural sector and, at the same time, has an effect to fall the nominal wage in the rural sector. The findings of these comparative static analyses appear to match the fact that a large number of workers come from Myanmar to Thailand and are obliged to engage in subcontracted agricultural production and fishery processing in the informal sector at low wage levels.

#### 8.4 Impact of Uniform Minimum Wage of 300 Baht throughout the Country

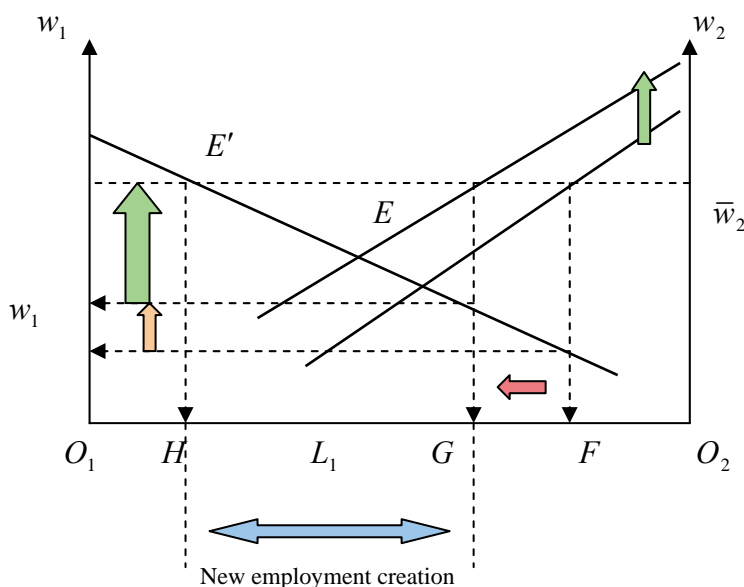
In January 2013, the Thai government raised the legal minimum wage to 300 baht uniformly throughout the country. This section examines its impact on the Thai economy. However, since the model is based on the assumption that the economy has no unemployment, we cannot use it for comparative static analyses using the model, so we use a box diagram and conduct visual analyses.

If the marginal product value curve of manufacturing in the urban sector is constant, a rise in the legal minimum wage in the urban sector decreases the employment level of labor in the sector due to the subjective equilibrium condition of firms. In the Thai economy, however, FDI sharply increased from the end of the 1980s. An increase in FDI has an impact to continuously shift the marginal product value curve of manufacturing in the urban sector upwards. Here, even if the minimum wage in the urban sector is raised, so long as the effect of capital inflow exceeds that of wage increase, labor demand in the urban sector increases and the employment level of labor in the urban sector expands.

An increased labor demand in manufacturing in the urban sector encourages labor force in the rural sector to move to the labor market. And they find regular employment in the urban sector. The employment level of labor in the rural sector falls by the amount that has disappeared and moved to

the urban sector, and the nominal wage in the rural sector rises<sup>111</sup>. Suppose that the nominal wage in the rural sector  $w_1$  becomes equal to that in the urban sector  $\bar{w}_2$ . In the model, it is the case where  $\alpha = 1$  in (8.6). In this case, however, if an endogenous variable, nominal wage  $w_1$ , is made fixed, the model is short of one variable that should be determined in relation to the number of equations: the system becomes an overdetermined one and cannot determine a unique value for each endogenous variable.

Figure 8.4 Impact of Wage Increase in Sector 1



Suppose that nominal wage in the rural sector becomes the same as the minimum wage in the urban sector. If the subjective equilibrium of producers in the rural sector is maintained, then the employment level of labor in the rural sector shrinks by the length of  $GH$  to  $O_1H$ . Since the rural sector does not have sufficient capital accumulation, even manufacturers productivity there adopt the labor-intensive production method. Thus, the ratio of labor cost in output is relatively greater than that of capital cost, so labor cost exceeds capital cost in many cases when the capital intensity condition is satisfied. In such a production mode, a rise in the minimum wage raises wage cost and suppresses corporate profits. Thus the employment level of labor falls according to the subjective equilibrium condition of firms. Despite all this, as the social infrastructure is developed, FDI that has concentrated in the urban sector begins to be directed to rural areas (as foreign capitals including Japanese capital have already made a foray into the northeastern region.) Expansion of foreign capital into the rural sector prompts the sector to accumulate capital stock and, as a result,

<sup>111</sup> As the comparative static analysis of an increase in labor endowment has clarified, if workers migrate from neighboring countries and work in the rural sector in Thailand, the nominal wage in the rural sector falls. Therefore, it is considered that, in reality, even after Thai workers migrate from the rural to the urban sector, the nominal wage in the rural sector remains unchanged.

shift the marginal product value curve of labor in the sector upwards, which is considered to lead to an increase again in the employment level in the rural sector that briefly fell. The abundant quality labor force is attractive for the subjective equilibrium of firms, and thus improvements in educational opportunities, a key to labor supply, will inevitably become more and more important.

In addition, an ordinary demand function exists for each of the two goods on the demand side of the two-sector neo-classical model. Since an ordinary demand function is a homogeneous function of degree zero with respect to income and price, a raise in income for exogenous reasons results in an increase in price by the same amount unless the quantity of the good concerned increases. In other words, this analysis suggests that a raise in the legal minimum wage to 300 baht uniformly across the country may cause inflation in the Thai economy.

## Chapter 9 Conclusions

Thailand, steering the modernization of the economy under the initiative of Prime Minister Sarit in 1960s, overcame a number of difficulties including the oil shock, sharp declines in agricultural product prices and the currency crisis, and has realized the prosperity which the country now enjoys. The process of Thailand's economic development is that the country took advantage foreign capital for its own development under policy of fully opening up to the outside world. The country has strived to promote the industrialization policy through introduction of foreign capital since the mid-1960s, when the Sarit administration adopted, up to the present date. It has faced a turning point only once after the second oil shock when it gave import substitution industrialization and steered itself in the direction of export-oriented industrialization. Other than this, Thailand has been consistently pursuing industrialization with introduction of foreign capital through openness policy. It has proactively attracted foreign capital by establishing an investment environment and industrial infrastructure, and ensuring free economic activities to enable foreign businesses to directly invest in the country without difficulty.

The economic disparity between urban and rural areas in Thailand has been greater than that in other countries in Southeast Asia. Even in the latter half of the 1990s when the county had already reached at a certain stage of development, there was no sign of a reduction in the urban-rural income disparity although the Thai government took a series of policies to reduce the disparity. The northeastern region where one third of the population lived, in particular, had no specific industry other than agriculture – and the productivity of agriculture was lower than that in the rest of the country – and struggled to break out of the poverty trap.

Prime Minister Thaksin Shinawatra taking power in 2001 launched various regional promotion measures under the Dual Track Policy, which succeeded in vitalizing rural economies. The measures including a debt moratorium and buyback of agricultural products worked well and improve financial access across rural areas. The financial access vitalized the currency economy in rural areas, while promotion of the One Tambon One Product project and niche industries brought income into rural areas. However, industrial promotion and economic policy which directly reaches to rural area for vitalization of rural economies are no more than the trickle down approach, which the Thai government has repeatedly adopted. What this survey has found out is not the direct trickle down approach but a somewhat indirect mechanism to reduce economic disparity.

The idea is to develop the industrial infrastructure and thus investment environment for introduction of foreign capital, which creates employment opportunities, while expanding educational opportunities in rural areas to make it possible to create necessary labor supply. Workers supplied from rural areas find jobs, through the formal labor market, in industrial estates and other places with capital accumulation across the country, and remit part of their earnings to rural areas, their hometowns. Put differently, the mechanism to reduce disparities clarified by this study is to develop the educational environment in rural areas first, reduce urban-rural educational disparity and



then to reduce urban-rural economic disparity through employment in the labor market. The mechanism is unique to recent Thailand and should be called a “Thai model.” This is unique to Thailand “in recent years” because, sufficient demand has to be produced in the formal labor market to make the mechanism properly function. As referred to in detail in various chapters, Thailand developed the industrial infrastructures across the country thanks to economic assistance from advanced countries which includes Japanese ODA. On the next stage, industrial estates including the Eastern Seaboard were built in various regions. Foreign companies built their factories in such industrial estates in search of cheap and quality labor force, which created employment and increased labor demand.

Figure 9.1 shows a comparison of deformed urban-rural labor movement and flows of transferred income between the 1980s and the 2000s. Domestic labor migration from rural areas in the northeastern, northern and other regions to urban areas existed in both decades, but the implications for the economy are completely different.

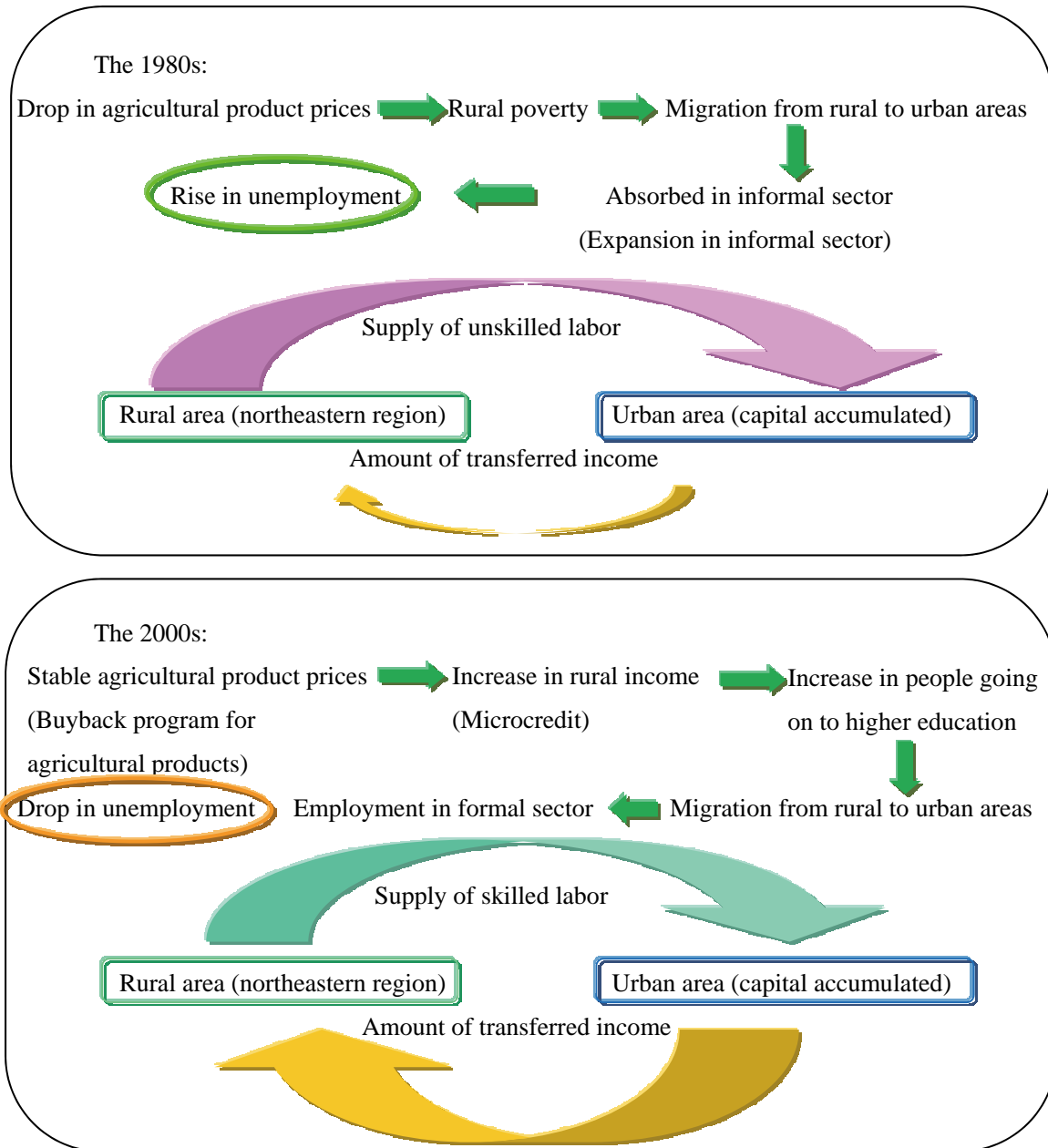
In the 1980s, agricultural product prices fell and farmers’ income also fell sharply, resulting in outflows of a large number of farmers to Bangkok as migrant laborers. Most of these migrants did not receive even primary education and thus could not enter the formal sector of the labor market to which the legal minimum wage was applied<sup>112</sup>. Bangkok’s Klong Toey Slum and other slums were formed or expanded in size around that time. Workers from rural areas were obliged to get a job in the informal sector at low pay and had difficulty in making remittance to their families. As a result, and also because of the second oil shock in 1979 and a drop in agricultural product prices in the 1980s, unemployment rate sharply increased, not just rural poverty in the northeastern and other regions remained unsolved but also the gap with urban areas expanded.

In the 2000s, effective demand in rural areas expanded thanks to the government’s well-established buyback program for agricultural products and the Thaksin administration’s poverty reduction programs in rural areas. At the same time, Japan’s and other FDI facilitated to form production bases in the Eastern Seaboard, the Bangkok metropolitan area, Ayutthaya Province and other regions and create a large number of jobs in such areas. Currently, new graduates from upper secondary schools or vocational schools, or workers having received vocational training are migrating as regular workers from the northeastern and northern regions to regions with capital accumulation. They are hired in the formal sector, work for the legal minimum or higher wages and send part of their salaries to their families in hometowns. The government’s repeated raises in the legal minimum wage increases the ratio of labor cost to production cost and weighs on the financial conditions of enterprises, but at the same time increases workers’ income and the amount of money transferred to their families. Consequently, household incomes in the northeastern and northern regions have increased, and economic disparity with urban areas is being reduced.

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<sup>112</sup> The term “formal sector” refers to regular employment that can receive the legal minimum or higher wage.

Figure 9.1 Change of Employment Pattern and Domestic Migration



Source: Author

Labor migration from rural to urban areas raised national unemployment rate and enlarged the urban-rural economic disparities in the 1980s, but reduced unemployment rate, increased rural income and reduced the disparity with urban areas in the 2000s. A difference between the two decades is the nature of migrant workers only: that is, unskilled labor in the 1980s and skilled one in the 2000s<sup>113</sup>.

<sup>113</sup> The term “skilled labor” refers to workers who can enter the formal sector of the labor market, regardless of their technical level.

Currently, Thailand is seeking change in the domestic industrial structure - a shift from labor-intensive industries such as light industry to capital-intensive ones using advanced technology. An increase in FDI enabled the country to sophisticate production facilities and accumulate physical capital. It is impossible, however, to make up for human capital with workers from abroad, which should be interacted with physical capital to optimize the country's capital-labor ratio. The Thai economy since 2000 suggests the importance of not just physical capital accumulation but also human capital accumulation in rural areas, as well as industrial decentralization. It has proven that correction of urban-rural disparity in education will make rural workers match job opportunities in the urban labor market and reduce economic disparity between urban and rural areas.

According to data, unemployment rate in Thailand has been below 1 percent: it is not too much to say that the country is in the full employment. Economic growth with maintaining fully-employed production factor market means in a way optimal growth on a balanced growth path. Whether or not the labor market equilibrium is stable is yet open to question. The price in the labor market is wage, and wage is determined as the equilibrium price when supply equals demand in the market. In 2013, the Thai government raised the legal minimum wage in every region of the country to 300 baht per day. If the prescribed legal minimum wage is identical or close to the shadow price reflecting the value of labor in the labor market, the supply-demand balance in the labor market will be sustained. As economic theory tells, however, various distortions will occur not just in the labor market but also in the economy as a whole if a legal minimum wage deviates from the shadow price in equilibrium.

An increase in wages increases labor cost and suppresses corporate management in labor-intensive industries. In such circumstances, a shift from labor-intensive industries from technology-intensive or capital-intensive industries is urgently needed, and the Thai government is in fact seeking change in the domestic industrial structure at the moment. The shift, however, cannot be realized in a short period: though it depends on the nature of industry, substitution of production factors, or replacement of labor by capital, often requires technology innovation and thus 10-year units of time.

The Harrod-Domar economic growth model<sup>114</sup> is an early model of economic growth, which was presented to explain conditions necessary for constant economic growth when the market mechanism properly functions. The model uses a “fixed-coefficient production function,” in which there is no substitutability between capital and labor<sup>115</sup>. The sufficient condition for constant economic growth in the Harrod-Domar model is:

$$(9.1) \quad \frac{s}{v} = n.$$

where  $s$  on the left-handed side denotes the propensity to save in the economy;  $v$  denotes a coefficient regulating the relationship between capital stock and output and is called the

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<sup>114</sup> For details of the Harrod-Domar economic growth model, See R. Harrod (1948) and E. Domar (1946).

<sup>115</sup> The fixed-coefficient production function is also called the Leontief production function, after its inventor, the economist, Wassily Leontief.

capital-output coefficient representing the technology level concerned<sup>116</sup>; and  $n$  on the right-handed side denotes the growth rate of labor supply. If equation (9.1) is satisfied, the economic growth under the full employment of capital and labor can be achieved. Any of the three variables, however, is not determined within the system but exogenous variables given from outside. Thus if the left-handed side equals the right-handed side, it is a mere coincidence: the equality does not normally hold. This is the reason why the condition is sometimes called a “knife edge.” In sum, the Harrod-Domar model explains that an economic growth path under the full employment of capital and labor is unstable.

It is considered that the knife edge condition of equation (9.1) holds in the present Thailand. As described above, both  $s$  and  $v$  are exogenous variables: the former is regulated by the economy within Thailand, and the latter by the technology level of the domestic industries or foreign capital that make direct investment in the country. Thus, the left-handed side of equation (9.1) is constant<sup>117</sup>. Put differently, the equality of the equation holds in the present Thai economy in that the Thai government has strived to hold the equality by expanding opportunities for the people to receive secondary education and raising  $n$ , the growth rate of labor. The condition of equilibrium growth path under the full employment of the both production factors, capital and labor, is coincidentally satisfied as a result of raising  $n$ , the growth rate of labor, or, more concretely, by establishing lower and upper secondary schools in the northern, northeastern and other agricultural regions and making tuitions until the end of upper secondary school education free of charge. There is, however, no guarantee that the condition holds at all time until capital and labor can substitute for each other. It is considered that an inflow of migrant workers from CLM countries or a rise in the legal minimum wage unanimously throughout the country affects the value of  $n$ .

In its process of economic growth, Thailand placed emphasis on “efficiency” to accelerate growth and accumulated capital in urban areas. As stated earlier, seeing the rapid growth in the Thai economy since the latter half of the 1980s, Japan provided the country with ODA loans to support development of infrastructure necessary for Japanese firms to make a foray into the Thai market, such as roads, railways, electricity and water supply, and contributed to capital accumulation in urban areas. On the other hand, it was considered to be desirable to accumulate capital in rural areas for the sake of fairness. In other words, there was said to be a trade-off between efficiency and fairness. However, now that the income levels in rural areas in various regions have improved and microfinance has been well established there, mechanization will directly improve agricultural productivity and rural income further. Use of agricultural machines will reduce labor necessary for agricultural work, which enables securement of more liquidities through employment in the formal sector. An increase in agricultural income by streamlining agricultural work will further reduce

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<sup>116</sup>  $v$  can be obtained by the equation  $v = K/Y$ , where  $v$  stands for the ratio of the amount of capital  $K$ , which is required for an enterprise to realize the planned production volume in the next term, to the planned production volume in the next term  $Y$ .

<sup>117</sup>  $s/v$  is called warranted rate of growth, which is the rate of growth at which capital is fully used for investment.

economic disparity between rural and urban areas.

If comparative advantages in the Thai industrial structure are taken into account, agriculture is still a vital, key industry. It is certainly important for the country to attract and diffuse manufacturing to rural areas, create jobs and disseminate wealth throughout the country in the process of economic development in future. Even if the Thai government does not take the initiative, capital will surely accumulate in various regions as a result of the behavior of independent, profit-maximizing enterprises (this has actually happened in some regions). Even so, trickle-down development policy relying solely on an expansion in manufacturing cannot break the trade-off relation between efficiency and fairness. More cash income must be secured not by reducing the agricultural share and increasing the manufacturing share but by simultaneously increasing agricultural income through mechanization and increasing employment in manufacturing sector. Not just an alleviation of the economic disparity through reductions in urban-rural educational disparity but also an improvement in agricultural efficiency in rural areas in the northern and northeastern regions will also produce an improvement in fairness in the sense of correction of regional disparity with urban areas.

## Supplement

In relation to Chapter 4 “Thailand’s Development Policies and Japan’s Economic Cooperation,” this section first lists Japan’s ODA projects for Thailand and then gives account of “Japan’s ODA assistance to the northeastern region in Thailand” and “agricultural credit and microfinance in Thailand”.

### Specific cases of Chapter 4 “Thailand’s Development Policies and Japan’s Economic Cooperation”

#### 4.2.3 Trends in ODA Loan’s Target Sectors (examples of assistance)

##### The 1970s

- Productivity road program
- New village development program
- Village electrification project

##### The 1980s

- The Eastern Seaboard development plan: Projects of construction of harbors, industrial parks, railways, roads and water pipes, etc.
- Development of rural and agricultural areas: Projects related to agricultural development, electricity distribution to rural areas, etc.
- Modernization of export industries and assistance to small and medium-sized industries: Modernization of export industries (IFCT Loans (1<sup>st</sup> to 3<sup>rd</sup> phases)), ASEAN-Japan development fund (AJDF), etc.

##### The 1990s

- Social infrastructure development

Education and human resources development: Strengthening vocational and technical manpower production (FY1994), Japan-Thailand technology transfer project (FY1995), and Human resource development centers for industries project (FY1998)

Health care: Rural health infrastructure strengthening project (FY1996) and Community hospital wastewater treatment project (FY1999)

General social infrastructure: Social investment project (FY1998)

Environmental protection: Environmental protection promotion program (FY1992 and FY1997), the Environmental fund project (FY1993) and Flue gas desulfurization plant for Mae Moh Power Plant (FY1993)

Reductions in regional disparity: BAAC loan (agricultural credit for rural development project in FY1998), Regional development programs (FY1993 and FY1998), Three provincial cities water supply expansion project (FY1992), Three southern provincial cities water supply expansion (FY1993), Project for revitalization of the deteriorated environment (FY1998)

##### The 2000s

- MRTA initial system project (Blue Line)
- Second Bangkok International Airport development project
- Bangkok Water supply improvement project, etc.

#### **4.2.4 Grant Aid Assistance (examples of assistance)**

- Agriculture, forestry and fisheries: Irrigation engineering center, cooperation related to agricultural development to Kasetsart University, improvement in the quality of maize, Agriculture development research center in the northeast Thailand, Central forest research laboratory and training center, Regional agricultural cooperative training center, National animal health and production institute, Foot-and-mouth disease vaccine production center, and Seacoast aquaculture
- Education: Vocational training centers in Khon Kaen, Ubon and elsewhere, and King Mongkut's Institute of Technology
- Healthcare: Mahasarakham nursing college, National institute of health, and Primary healthcare training center
- Industry: Development of metal-working and machinery industries development institute, Providing equipment for Pathumwan Technical College, Industrial standardization testing and training center, and Industrial rehabilitation center
- Water supply: National waterworks technology training institute
- Environment: Environmental research and training center

#### **4.2.5 Technical Cooperation (examples of assistance)**

- Third Country Training Programs (TCTP) in Agricultural Extension Course for countries in Asia and Africa
- Enhancing the competency of Electrical and Electronics Institute (EEI)
- Assistance to setting environmental and emission standards in Thailand
- Industrial statistics
- Capacity development in disaster management
- Regional cooperation project on capacity building of drug analysis for improvement of drug law enforcement
- Institutional and capacity development in the targeted fields of science and technology (HRD and standardization project on PV)
- Institutional and capacity development in the targeted fields of science and technology (establishment of technology Licensing Office (TLO))
- Automotive human resource development for supporting industries
- Community leader development in agricultural cooperatives
- Capacity development for promoting low-income housing development
- Tax compliance enhancement

- Asia-Pacific Development Center on Disability
- Capacity development of EEI for conformity assessment
- Development of a community based integrated health care and social welfare services model for older persons
- Regional cooperation for animal disease control among Cambodia, Lao P.D.R., Malaysia, Myanmar, Thailand and Vietnam
- Risk management for customs in Mekong region
- ASEAN University Network/Southeast Asia Engineering Education Development Network
- Capacity building of Neighbouring Countries Economic Development Cooperation Agency
- Compiling indices for monitoring and evaluating the Tenth National Development Plan
- Strengthening of Multi-Disciplinary Teams (MDTs) for protection of trafficked persons
- Human resource development through utilizing the information technology for rural community vitalization
- Capacity building on climate change adaptation and mitigation for implementation in Bangkok
- Capacity development and institutional strengthening for GHG mitigation
- Capacity building of government authorities on decentralized wastewater treatment in Mekong region
- Enhancing the capacity on local public service provision through local coordination and cooperation

### **Japan's ODA assistance to the northeastern Thailand**

This section outlines ODA projects undertaken by Japan for the northeastern region which has been considered to be the poorest region in Thailand.

Judging from project names, projects focusing on the northeastern regions are as listed below:

#### (1) ODA Loan Projects

##### (i) Electric power

- ♦ The Lam Dome Noi Hydro-Electric Project (former Sirindhorn Dam)  
Approved in FY1969 and FY1970 for the project value of 1.6 billion yen. The plant was built on the Mun River in Ubon Ratchathani Province.
- ♦ The Lam Dome Noi Electric Energy Distribution Systems Project  
Approved in FY1970 for the project value of 800 million yen.
- ♦ The Lam Ta Khong Pumped Storage Project  
Approved in FY1994 for the project value of 18.2 billion yen (Loan project jointly with the World Bank, which approved of a loan worth 9.7 billion yen. The project constructed the Lam Ta Khong reservoir with two power plants of 250MW capacity each)

##### (ii) Water supply

- ♦ Nakhon Ratchasima Water Supply Expansion Project



The part of engineering service was approved in FY1983 (approved amount: 230 million yen).

The main part approved in FY1987 (approved amount: 2.88 billion yen)

- ♦ Khon Kaen Water Supply Expansion Project

The part of engineering service was approved in FY1983 (approved amount: 140 million yen).

The main part approved in FY1986 (approved amount: 2.27 billion yen)

(iii) Agriculture

- ♦ The Project for Revitalization of the Deteriorated Environment I

Approved in FY1998 for the project value of 3.6 billion yen. The project covered a total of 48,000 ha in 10 districts in four provinces (Khon Kaen, Sakon Nakhon, Mukdahan and Maha Sarakham provinces). The project provided landless farmers with farmland and fund loans, and built farming roads, reservoirs and other agricultural fundamental infrastructures.

(2) Grant Aid and Technical Cooperation

- ♦ Nong Khai-Vientiane Telecommunication Facilities (grant aid): implemented in FY1970-1971
- ♦ Project for the vocational training center in the Northeast of Thailand (grant aid and technical cooperation project): The project constructed the center in Khon Kaen. Implemented in FY1977-1981
- ♦ New village construction program (grant aid): implemented in FY1980
- ♦ Establishment of Mahasarakham nursing college (grant aid and technical cooperation project): implemented in FY1981
- ♦ Forest research laboratory and training center (technical cooperation project)  
Implemented in FY1981-1986 and FY1986-1993. The project covered Nakhon Ratchasima area.
- ♦ Primary healthcare training center (grant aid and technical cooperation project)  
Implemented in FY1982-1983. The project constructed a center in Khon Kaen, as well as in central Nakhon Sawan Province.
- ♦ Project for agriculture development research in the northeast Thailand (grant aid and technical cooperation project)  
Phase I: FY1983-1988, Phase II: FY1988-1994, and Phase III: FY1999-2000. US-Japan development project.
- ♦ Language laboratory equipment for learning Japanese language in Khon Kaen and Songkran Universities (grant aid project): implemented in FY1984
- ♦ Promotion of agricultural cooperatives (grant aid and technical cooperation project)  
Implemented in FY1984-1991. The project established training centers for regional agricultural cooperatives. It involved the northeastern region in Thailand.
- ♦ National Waterworks Technology Training Institute (technical cooperation project)  
Phase I implemented in FY1985-1989 and Phase II in FY1994-1999. The project built training

centers in Chiang Mai province in northern Thailand and Khon Kaen province in the northeastern Thailand.

- ♦ Ubon Ratchathani vocational training center (grant aid and technical cooperation project)  
Implemented in FY1987-1993.
- ♦ Project for bridge construction in northeast Thailand (grant aid project): implemented in FY1989-1990.
- ♦ Public health project (technical cooperation project)  
Implemented in FY1991-1996. The project set Khon Kaen province as a model area.
- ♦ Establishment of large-scale nursery centers in the northeast of Thailand (grant aid project)  
Implemented in FY1991-1992. The project built large-scale nursery centers in Nakhon Ratchasima, Udon Thani and Yasothon provinces.
- ♦ Family planning and maternal and child health project (technical cooperation project)  
Implemented in FY1991-1996. The project offered cooperation to the northeastern region which lagged behind the establishment of the maternal and child health scheme.
- ♦ Reforestation and extension project in the northeast of Thailand (technical cooperation project)  
Phase I implemented in FY1992-1998 and Phase II in FY1994-2004. The project aimed at Nakhon Ratchasima province.
- ♦ Pasture seed production development project in north-east Thailand (technical cooperation project): implemented in FY1999-2004.
- ♦ Project for development of trauma center complex (technical cooperation project)  
Implemented in FY2000-2005. Following the findings of the public health project, the project offered cooperation to the Khon Kaen National Hospital.
- ♦ Provision of audio equipment to Khon Kaen University (grant aid cooperation): implemented in FY2002.
- ♦ Assistance to prevention and infected patients of AIDS in the northeastern Thailand (grant aid cooperation): implemented in FY2003.

### (3) Development Study

- ♦ Road network development project in the northeastern region (master plan and F/S):  
implemented in FY1983 and FY1985
- ♦ Medium-scale irrigation package project in the southern area of the northeastern Thailand (F/S):  
implemented in FY1984
- ♦ Integrated rural development project for salt-damaged areas in the northeastern Thailand  
(master plan and F/S): implemented in FY1991
- ♦ Regional development plan for the lower northeast and the upper east region in the Kingdom of  
Thailand (master plan): implemented in FY1993
- ♦ Integrated rural development plan for farmland reform areas in the northern areas of the  
northeast Thailand (master plan and F/S): implemented in FY1998

- ♦ Integrated development plan for the border region in Thailand and Lao PDR (master plan and pre F/S): implemented in FY2000
- ♦ Industrial development plan for Nakhon Ratchasima region (master plan): FY2000

The list above shows that there are not so many ODA loan projects that are exclusively addressed to the northeastern region. Projects for the region were in the field of electricity, urban water supply and agriculture (assistance for farmland reform)

In practice, however, projects covering the entire country such as the BAAC (Bank for Agriculture and Agricultural Cooperatives) agricultural credit project and those covering more than one region have often covered the northeastern region, too, so funds from Japan's ODA loans have been injected in the rural electrification, road development, tourism infrastructure development, small irrigations, vocational training schools and other sectors in the northeastern region. Thus, it is obvious that Japan has long strived to support regional development and reductions in the regional disparity for the benefit of the region. In the 40-year history of Japan's ODA loans to Thailand, however, it is observable that the northeastern region is not necessarily counted as a region subject to special assistance. This may be partly due to the fact that the Thai government has not given priority for many years to full-scale development of economic infrastructure in the northeastern region when it considers how to allocate funds from Japan's ODA loans. In the 2000s, the northeastern region also began to see full-fledged industrial development, but the Thai government, the Thaksin administration, declared graduation from ODA and shifted its policy to promotion of assistance to the neighboring countries. Consequently, the number of Japanese assistance loans to Thailand became limited afterwards, and thus the country had no chances to intensively use ODA loans for development of economic infrastructure in the northeastern region.

On the other hand, quite a few grant aid and technical cooperation projects have targeted the northeastern region in Thailand in various sectors ranging from agriculture and forestation to bridges, water supply, healthcare, vocational training and others. Both grant aid and technical cooperation projects have been carried out widely across the country, but it seems that the northeastern region needed more grant aid and technical cooperation projects than loan projects because the region lagged behind the rest of the country in terms of industrial development and poverty reductions.

As listed above, a fairly large number of ODA projects have been implemented, which does not exclusively target the northeastern region but does include the region as an important component. Many of them are loans for regional development programs, rather than for large-scale infrastructure construction. Major examples are described below:

- Agricultural credit project for BAAC: To provide the BAAC with Japanese yen loans, the project approved for a grant of 41.4 billion yen for 11 phases from Phase I in FY1975 to Phase XI in FY1991. This was followed by the approval of loans of 49.6 billion yen for six phases from FY1992 to FY1998. (The project in FY1998 was implemented under the name of Agricultural Credit for

Rural Development and Job Creation Project.) It covered all the rural areas in Thailand but counted the northeastern region as an important project area. Details of the agricultural credit project are discussed later in this chapter.

- New village development program: Phase I was approved in FY1979 and Phase II in FY1981. The total amount approved was 14 billion yen. The project aimed to bridge the urban-rural disparity for the benefit of poverty areas in the northern, northeastern and southern regions. It constructed reservoirs and other social infrastructures and promoted domestic industries. Phase I was addressed to all the northeastern provinces, and Phase II to all of them except six provinces.

- Small scale irrigation project: Loans were granted from Phase I (FY1977) to Phase VI (FY1985). The total amount approved was 33.7 billion yen. The project constructed reservoirs, dams and other irrigation facilities. Of a total of 2,345 facilities built in Phases I to III, 1,248 facilities were in the northeastern region. Phases IV to VI planned to construct 755 facilities in the region out of a total of 1,500 facilities (that is, some half of the facilities to be built under the project were in the northeastern region).

- Rural electrification project: loans were granted in four phases: Tambon electrification (FY1974); rural electrification Phase II-1 (FY1981); Phase II-2 (FY1985); and Phase III (FY1991). The total amount approved was 22.6 billion yen. The project aimed to improve the electrification rate in rural areas as part of rural development. Phase I of the rural electrification was financed by the KfW, a German government-owned development bank. Phases II and III were financed by Japan's ODA loans. Phase II was addressed to the northern and northeastern regions, and Phase III to rural areas in the entire country.

- Power distribution system reinforcement project: Loans were approved for a total of nine phases with the total amount of 75.5 billion yen: Phase I (FY1974), Phase II (FY1977), Phase III-1 (FY1982) – III-3 (FY1987), Phase IV-2 (FY1988) – Phase IV-3 (FY1990), and Phase V-1 (FY1991) – Phase V-2 (FY1994). Together with the regional electrification project, this project built main electricity distribution networks. Phase IV-1 was financed by the KfW. The project covered the entire nation including the northeastern region.

- Normal rural electrification project: Loans were approved for two phases: Phase I (FY1983) and Phase II (FY1990). The total amount approved was 13.7 billion yen. The project, together with the rural electrification project and the electricity distribution network project, aimed for electrification of rural areas. This project, however, required target villages to make certain financial contributions. Phase I was jointly funded by the World Bank and Japan's ODA loan scheme. The former was in charge of the central and southern regions and the latter in charge of the northern and northeastern regions. Phase II, financed with the ODA loan, was addressed to the entire country.

- Large swamp inland fisheries project: approved in FY1988. The total amount approved was 2.6 billion yen. Of the poverty areas designated as priority development areas by the NESDB, the project covered Kwan Phayao Lake (2,450 ha) in northern Phayao Province, Bung Boraphet Lake (12,850 ha) in central Nakhon Sawan Province and Nong Han Lake (9,940 ha) in northeastern Sakon

Nakhon Province.

- Regional development project: Loans were approved twice in FY1993 and FY1998. The total amount approved was 7.8 billion yen. The project aimed for construction of tourism-related facilities and human resources development in rural areas. Phase I covered northern Chiang Mai and Chiang Rai provinces, southern Phang Nga, Phuket and Songkhla provinces, as well as one sub-project in northeastern Udon Thani Province (the Ban Chiang National Museum and Pho Si Nai Temple) and five sub-projects in northeastern Ubon Ratchathani Province (Kaeng Tana, Pha Taem and other national parks, etc.). Phase II aimed to repair the Ban Chiang National Museum and temples as in Phase I and covered facilities to learn natural environments in Nakhon Ratchasima.

- Productivity road program: Loans were approved in three phases: Phase I (FY1977), Phase II (FY1980) and Phase III (FY1983). The total amount approved was 18.7 billion yen. Phases I and II provided simply paved roads linking production sites of agricultural products and markets to promote rural development in the central, northern and northeastern regions. Phase III had the same objectives but focused on the northeastern and northern regions.

- Highway sector project: Loans were approved in two phases: Phase I (FY1988) and Phase II (FY1992). The total amount approved was 6.3 billion yen. Phase I aimed at 20 arterial roads in the northeastern and central regions. As for the northeastern region, it covered a total of seven roads of 235 km. Phase II financed improvement work of three roads that was initially included in Phase I but was not carried out because of price hikes of materials and equipment. Of them two roads were in the central region and the remaining one road was in the northeastern region (Provincial road between Lao and Tha Yom: 42 km).

- Environmental conservation fund project: Loans were approved in FY1993 with the amount of 1.2 billion yen. Of a total of 27 sub-projects, nine projects were for urban areas in the northeastern region. They were used for projects related to waste landfilling in cities in Khon Kaen, Maha Sarakham and elsewhere.

- Strengthening vocational training college project: Loans were approved in FY1994 with the amount of 7.2 billion yen. The project covered, among other colleges, three training colleges in Khon Kaen (Kalasin, electricity), Nong Khai (electronics) and Nakhon Ratchasima (production technology) provinces. The project also covered colleges in Sattahip (production technology), Rayong (petrochemical), Chanthaburi (electronics) and Trat (electricity).

- Social investment project: Loans were approved in FY1998 with the amount of 13.4 billion yen. The project was addressed to the entire country, implementing civil engineering work (e.g. irrigation) and short-term vocational training and other programs that had strong impact on employment creation. It was a part of unemployment and economic stabilization measures after the economic and financial crisis in Asia. Certainly, a certain amount of fund was allocated to the northeastern region, but it is difficult to find a clear picture of fund allocations among regions.

- Second Mekong International Bridge construction project: Loans were approved in FY2001 with the amount of 4.1 billion yen. As a part of the Greater Mekong Development Plan, the project

constructed an international bridge over Mekong River between Savannakhet in Laos and Mukdahan in the northeastern region in Thailand. The bridge is expected to contribute to regional development of the northeastern Thailand.

In passing, it is noteworthy that a development study for the Integrated Development Plan for the Border Region in Thailand and Lao PDR was carried out in FY2000-FY2001, a multi-national study covering the Mekong Basin.

The outline of Japan's ODA to the northeastern region in Thailand from the 1970s to the 2000s listed above can be summarized as follows:

Table 1 List of Japan's ODA Projects in the Northeastern Thailand

Sector	ODA loans	Grant aid and technical cooperation projects
Electric power and telecommunications	Hydroelectric power, electrification of villages and rural regions	Telecommunications
Road and bridge	Construction and improvement of regional arterial roads	Construction of regional bridges
Agriculture, forestry, livestock and fisheries	Small irrigation, inland fishery development, assistance to agricultural development of farmland reform areas, agricultural finance (BAAC)	Forestation, nursery centers, agricultural research in the northeastern Thailand, aquaculture, livestock healthcare, promotion of agricultural cooperatives (training centers for regional cooperatives), Emergency excavation of wells for draught regions, and grass seed production development
Water supply	Urban water supply	Urban water supply and waterworks technology training centers
Education	Strengthening vocational training colleges	Vocational training centers, equipment for university education
Healthcare		Nursing schools, primary healthcare training centers, physical trauma centers, public health, family planning and maternal and child health, and support to AIDS prevention and infected patients
Regional development	Regional development (tourism facilities) and new village development	New village development and development of living environment for areas near the borders

Cross-border project	The Second Mekong Bridge	Study for the Integrated Development Plan for the Border Region in Thailand and Lao PDR
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Source: Created by the author based on JICA resources on projects in Thailand and project evaluation reports

On the whole, it can certainly be said that Japan has been devoted to cooperation with the primary focus on rural development through ODA loan, grant aid and technical cooperation projects for four decades since the 1970s in the northeastern Thailand.

The amount of ODA loans exclusively targeting the northeastern region (approved-amount basis) is 29.5 billion yen only, but still quite a few loan projects implemented nationwide have allocated a certain amount of funds to the region. The amount of such approved loans totals 311.8 billion yen: given that some 30% of the loans was spent on the northeastern region, it means that approximately 93.5 billion yen loans were directed to the region (though, again, the accurate amount cannot be clarified by a simple survey). If so, a total of 120-odd billion yen – 29.5 billion yen directly addressed to the region plus 30% of the total loan amount to Thailand – has been directed to the northeastern region. (It should be noted, however, that the loan amount approved is sometimes different from the amount of money (loan execution amount) actually extended to the recipients.) Therefore, the total amount of ODA activities provided to Thailand has been enormous since it includes the amounts of grant aid and technical cooperation projects though the total of these two cooperation forms is smaller than that of loan projects.

## **Agricultural Credit and Microfinance in Thailand**

### **Agricultural Credit by the BAAC**

#### (1) History

In 1947, immediately after the end of the World War II, the predecessor of the Bank for Agriculture and Agricultural Cooperatives (BAAC), the central player among governmental agricultural financing institutions, was established as the bank for cooperatives in Thailand. It initially had 15 branches but was reorganized in 1966 as the present BAAC and expanded its nationwide branch network particularly in the 1990s. The number of branches increased from 118 in 1989 to 592 in 2001. Since the 1970s when it established the organizational and financing schemes, the BAAC has financially supported agricultural development of the country and provided agricultural cooperatives with non-infrastructure assistance.

#### (2) Japan's assistance to the BAAC

It is Japan that started to provide the fledgling BAAC with full-scale assistance when the bank had not yet established its organizational scheme and had strong financial standings, either. Japan has supported the BAAC through ODA, especially through effective use of ODA loans. In 1975, it provided the bank with the first yen loan, and since then has continued to offer assistance until the beginning of the 2000s under the project names of BAAC loan, regional development credit, and credit project for regional development and employment creation. In almost three decades, Japan

launched 11 BAAC loan projects with the approved amount of 41.4 billion yen; five regional development credit projects with the approved amount of 18.9 billion yen; and one credit project for regional development and employment creation with the approved amount of 18.4 billion yen. In total, it launched 17 loan programs with the approved amount of 78.7 billion yen. It is believed that the loan-financed funds have been granted to rural areas across the country including the northeastern region where a large agricultural population lives.

ODA loans were effectively used not just for the BAAC to extend two-step loans to agricultural activities of farmers but also, through consulting services, for improvements in the agricultural credit scheme of the BAAC and enhancement of its screening capacity to give loans to farmers and agricultural cooperatives.

To strengthen agricultural cooperatives, on the other hand, Japan has provided indirect and collaborating assistance through grant aid cooperation and JICA technical cooperation projects: more specifically through the project for training centers for regional agricultural cooperatives (implemented in FY1987-FY1991) and the project for development of community leaders in agricultural cooperatives (implemented in FY2006-FY2007).

Among other donors assisting the BAAC, the Asian Development Bank (ADB) launched the Small Farmer Credit Program in 1995 and the Rural Enterprise Finance Project in 1997 (the total loan amount of 250 million dollars). Around the same time, the German Technical Cooperation implemented the Microfinance Linkage Project in collaboration with the BAAC, in which it offered support to farmers in the northeastern Thailand.

The following table lists the breakdown of ODA loans to the BAAC.

### List of ODA Loan Projects to the BAAC

#### (i) Loans to the BAAC

	Date of approval	Loan amount approved (hundred million yen)	Annual interest rate (%)	Repayment period (Grace period)	Subject of loan
Phase I	October 1975	20	3.75	20 (7) years	5 items including maize
Phase II	March 1977	60	3.75	20 (7) years	19 items including rice and fruits
Phase III	June 1979	36	3.25	30 (10) years	ditto
Phase IV	August 1980	33	3.0	30 (10) years	ditto
Phase V	April 1981	32	3.0	30 (10) years	Rice
Phase VI	September 1983	41.2	3.0	30 (10) years	8 items including rice and fruits
Phase VII	September 1986	10.13	3.5	30 (10) years	Rice and maize
Phase VIII	September 1987	36.72	3.0	30 (10) years	6 items including fruits and vegetables
Phase IX	September 1988	48.75	2.9	30 (10) years	4 items including fruits and vegetables, assistance to immigration to newly start farming



Phase X	February 1990	50	2.7	30 (10) years	5 items including fruits and vegetables, and rehabilitation from flood damage in the southern Thailand
Phase XI	September 1991	46.94	2.7	25 (7) years	"

(ii) Regional development credit projects and credit project for regional development and employment creation

	Date of approval	Loan amount approved (hundred million yen)	Annual interest rate (%)	Repayment period (Grace period)	Subject of loan
Agricultural credit for rural development project	January 1993	28.37	3.0	25 (7) years	6 items including fruits and vegetables, and loans to agricultural cooperatives
Agricultural credit for rural development project II	September 1993	35.32	3.0	25 (7) years	ditto
Agricultural credit for rural development project III	September 1995	83.50	2.7	25 (7) years	ditto
Agricultural credit for rural development project IV	September 1996	42.28	2.7	25 (7) years	6 items including fruits and vegetables, and forestation
Agricultural credit for rural development project V	September 1997	123	2.7	25 (7) years	6 items including fruits and vegetables, and environment
Agricultural Credit for rural development and job creation project	September 1998	183.6	1.0	25 (7) years	Forestation and agriculture, biogas plants, etc.

Source: Created by the author based on JICA ex-post evaluation report

The trend of ODA loans listed above shows that Japan injected funds in the BAAC once in 1-2 years since the BAAC loan Phase I in 1975, while paying attention to the needs of the bank for funds of agricultural financing. Japan's assistance was quite attractive and advantageous to the BAAC in that the annual interest rates were set at 2-3%, which enabled the bank to expand loans to farmers and agricultural cooperatives while strengthening its financial standings, and set the loan interest

rates to farmers fairly lower than those of commercial financing.

The approved amount of the final loan to the BAAC in 1997-98 reached more than 10 billion yen. It appears that the Japanese government intended to shore up rehabilitation of Thailand's macroeconomy under the Asian currency crisis.

Where the coverage of the loans to the BAAC is concerned, the loans in the 1970s and the early 1980s were granted for rice, and maize and fruit trees. After the latter half of the 1980s, the loans were granted for fruit trees and vegetables, excluding rice from the coverage. Behind this lies the fact that the Thai government saw that rice cropping got on track and began to seek diversification in agricultural products grown in rural areas. In the mid-1990s, the loans started to include forestation at the final stage of the series of assistance.

The credit project for regional development and employment creation was also directed to the BAAC but was a project-oriented loan, rather than agricultural credit.

### **History of Agricultural Financing Systems other than BAAC**

#### **(1) Tambon program**

Among direct budget allocation from the central government to farmers for their higher living standards, the policy under the Thaksin administration in the 2000s is still fresh in our minds. As described in Section 4.1, however, it is noteworthy that, as early as in 1975, the Kukrit administration carried out the "Tambon Program" as part of its welfare state-oriented financial policy. Under the program, the government uniformly allocated a total of 2.5 billion baht to some 40,000 tambon municipalities, the basic units of farming villages at the time. The government intended, through the budget allocation, to promote construction of village roads, bridges and agricultural irrigation channels and subsidize produce rice prices to ultimately achieve employment creation and boost income and consumptions among farmers. The program was fairly large scale, its budget accounting for 8% of the total government expenditure, and had the nature of a project, rather than budget allocation directly to farmers.

#### **(2) Klum omsap (saving groups)**

The BAAC launched agricultural credit services to provide farmers with government-backed low-interest rate loans when financing by ethnic Chinese money lenders were common in rural villages and farmers suffered from high-interest rate loans but had no access to general commercial finance. Yet, farmers in poverty could hardly manage to obtain a loan from the BAAC.

Klum omsap is grass-roots saving groups formed by farmers that extended small-amount financial assistance to farmers themselves. It satisfied farmers' financial needs that could not be satisfied by services of the BAAC. Villagers of klum omsap brought their own funds to the group and gave loans to each other at low interest rate. Since saving groups were formed by participants, borrowers were highly likely to complete their repayments, but the scale of loans was limited by nature. As the number of participants increased, mutual restraining force reportedly fell, resulting in a drop in the

stability as loan groups.

What follows was organization of saving groups based on administrative unit equivalent to villages called “muban”, local temples or other communities of relatives and local people. This new form of klum omsap comprised 100-300 households and thus had the capacity of extending larger funds to farmers. In the mid-1970s, saving groups started to be backed by the Community Development Department of the Ministry of Interior and NGOs. Even so, the ratio of its financing to the total amount of loans to farmers was apparently small. These saving groups are now valued not because of their nature as finance groups because of organization voluntarily formed by villagers themselves.

### (3) Village fund under the Thaksin administration

The Thaksin administration, after assuming power in 2001, immediately launched 11 emergency economic policies, which included a Kon-thun Muban, or village fund, program. The central government, through the program, directly distributed 1 million baht each to 70,000 tambon and 4,000 chumchon<sup>1</sup> (community-based organization in urban areas) to finance farmers. The fund amount totaled approximately 80 billion baht, apparently accounting for some 9% of all the government expenditure in FY2001.

The village fund extended loans to farmers at no interest rate, whereby villagers formed a village fund committee which screened investment projects requested by villagers and determined the interest rate and terms of repayments at its own discretion (though, following the approval by the committee, investment projects required the approval of the provincial village committee). The village funds extended loans to productive investments in agriculture, livestock business and commerce only<sup>2</sup>, and excluded loans for consumption and debt repayments of individuals from their scope.

The Government Savings Bank (GSB) and the BAAC were authorized by the central government to grant loans from the village fund.

As of 2003, the accumulated loan amount was 78.6 billion baht, the loan amount per case was 13,000-14,000 baht, and the average interest rate was 6.7% (while the average interest rate of the BAAC agricultural credit was 8.2% and that of non-institutional financing was some 22%). Reportedly, the GSB extended loans to some 55,000-odd tambon and 2,600 chumchon, and the BAAC extended loans to 15,000-odd tambon.

The characteristics of the village fund was basically the same as those of the saving groups in the sense that loans were granted to muban, an administrative unit, but the former had substantially less restrictions on loan funds thanks to funding by the government, and appeared to contribute, together with BAAC rescheduling policy for farmers and subsidies for medical expenses, to improvements in

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<sup>1</sup> Chumchon is local organizations chiefly in slums in urban areas that started to emerge in the 1970s. It started to be formed in areas other than slums since the mid-1980s.

<sup>2</sup> The fund was used for home manufacturing of handicraft in slack seasons for farmers, and thus apparently helped farmers increase their income raise funds for schooling and employment of their children.

household finances, mechanization of agriculture and spread of fundamental and secondary education in villages. As of 2011, the loan balance of the fund reportedly totaled 4.9 billion dollars, and the number of borrowers amounted to 8.5 million villagers.

### **Trend in Microfinance in Thailand**

Thailand saw the establishment of the BAAC and development of agricultural finance at a relatively early stage, so microfinance led by large NGOs was not well developed as in Bangladesh, in which the Grameen Bank and Brac microfinance program. Instead of these, saving groups voluntarily formed by village farmers and small-scale loans of the government-based village fund under the Thaksin administration played the role similar to microfinance.

The government, led by the Democratic Party, replaced the Thaksin administration but did not continue the village fund as it was, but the Yingluck administration taking office in 2011 announced to resume and revitalize the fund originating in the Thaksin administration. Daily News Thailand dated January 8, 2013, covered the story that the minister of the Office of the Prime Minister Waratep announced that the government would additionally distribute 1 million baht each to approximately 79,000 village funds established in villages across the country. Accordingly on January 14, Prime Minister Yingluck attended a ceremony to celebrate transfer of the additional funds. The government explained that it would distribute some 1.5 billion baht on January 14 and the remaining from time to time in future. The following are NGOs engaging in microcredit activities, not governmental organizations such as the BAAC and GSB.

- Common Interest International (in operation in the northern Thailand)
- Compassion Thailand (engaging in microfinance nationwide)
- Mirror Art Group (in operation with the base in Chiang Rai)
- Population and Community Development Association (engaging chiefly in support for family planning)
- SED (in operation in Surin Province)
- Step Ahead MED (targeting the poverty group in Bangkok)
- UHDP (in operation in Chiang Rai)
- World Vision (in operation nationwide)

These NGOs, entering into rural areas, engage in community-based and grass-roots activities, and microfinance is one of their tools to support villagers. It seems that the majority of them are active in the northern Thailand.

Local newspapers report the following trends in microfinance.

- Thailand Post participates in microfinance

The Cabinet of the Thai government approved in December 2010 a plan that Thailand Post would create a branch to provide microfinance services by using its post offices and network nationwide. Thailand Post can now use its capital of 50 million baht as the fund base and extend small amount

loans but at least 10,000 baht to borrowers. The post raise money for the fund from its own revenues and loans obtained from the GSB. It will set the interest rate of the microfinance service lower than rates of commercial banks. The Thai government commented saying that the new service would provide greater opportunities to people having no access to financing by using the nationwide network of the postal company. (Bangkok Post dated December 8, 2010)

- The Bank of Thailand (central bank) encourages commercial banks to operate in microfinance

The Bank of Thailand sent in May 2011 letters to commercial banks across the country, prompting them to positively operate in the field of microfinance. Stating that, as of 2007, 83% of the total population of the country had savings and access to financing as of 2007, but the remaining did not have sufficient access, the bank expressed its opinion that commercial banks ought to provide microfinance services so that such the population has access to financing. (Bangkok Post dated June 3, 2011)

These moves suggest that the Thai government views microfinance as a complement to ordinary credit extension of the BAAC and the village fund initiated by the Thaksin administration, and expects Thailand Post and commercial banks to vitalize microfinance. However, it is still questionable whether commercial banks start to provide microfinance services to the full extent because the services could be associated with risks from bad debts.

According to an ADB report published in 2011<sup>3</sup>, Thailand succeeded in poverty reductions to some extent but not sufficiently from the perspective of financial inclusion of low-income groups (for example, the ratio of savings to annual incomes is 30% among high-income population, whereas the rate is 10% among general workers and a mere 3% among farmers and laborers). The paper also states that particularly non-governmental activities for microfinance remain weak and immature. For this specific issue, the paper points out the following findings.

- Low-income families have access to a limited range of financial services and of lower quality services.
- While the government sector is the major provider of microfinance, the lack of private sector participation in the microfinance sector has limited the opportunities for efficiency betterment and innovations.
- Governmental restrictions on financing interfere with development of non-governmental microfinance providers.
- Interest rates of microfinance services are high as a whole.
- Microfinance institutions lack sufficient credit information about clients, and have low institutional capacity and very limited opportunities to access additional capital.
- Mobile phone banking has grown rapidly in other emerging markets but is essentially absent in the Thai market.

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<sup>3</sup> Poverty, Income Inequality, and Microfinance in Thailand, ADB Southeast Asia Working Paper series, Asian Development Bank (ADB), November 2011.

A series of actions that the Thai government has taken since 2011 towards assistance to microfinance seem to be the government's efforts to remove these constraints on microfinance. But it still seems that there is room for improvement in access of rural low-income population to finance, as well as the direct fund allocation to villages started by the Thaksin administration.

## **Conclusions**

Credit granting to villages in Thailand basically consists of agricultural credit of the BAAC, a governmental finance institution as its core, and saving groups in which farmers mutually help each other for small borrowings, though finance in the latter is limited to small loans.

The Thaksin administration starting in 2001 launched the village fund to complement saving groups on the initiative of the government to actively extend small loans to farmers. The GSB and BAAC operate financing services on a commission basis, and this mechanism has continued to date. In addition, the Thai government is currently planning to cover every population including the poverty group in the microfinance scheme by encouraging Thailand Post, commercial banks and other players to participate in microfinance.

Quite a few farmers in rural areas, particularly northeastern and other poor regions, now have access to low-interest rate loans thanks to long activities of the BAAC agricultural credit and the village fund since the 2000s. This, together with capital transferred by migrant workers in industrial regions, increased liquidity of farming family finances. These moves certainly contribute to diversification of agriculture, improvement in productivity and vitalization of purchase of farming machinery.

Field surveys conducted in 2012 as a part of this survey learned a case, where children of farmers who graduated from a university and found a job in the Bangkok metropolitan area came back to his hometown in the northeastern region, grew vegetables, flowers and other high-yield crops, and sell them at hotels and restaurants in Nakhon Ratchasima, Khon Kaen and other urban areas in the region.

It is certainly true that some people in the poverty group in rural areas still have no access to finance, but it is also true that farmers with business talent in agricultural or domestic industry production does vitalize new business movements and serve as bridges for the urban-rural economic disparity. Such moves, on the other hand, have another impact to widen the income disparity within a village.

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# Appendix

1. Questionnaire to Management
  - 1.1 Results of questionnaire survey
  - 1.2 Questionnaire sheet
  
2. Questionnaire to Factory Workers
  - 2.1 Simple tabulation of questionnaire results  
(Comparison of 3 regions)
  - 2.2 Cross tabulation of questionnaire results
  - 2.3 Questionnaire sheet

Reference: Sorting of Factory Workers Surveyed in terms of  
Province of Origin for Questionnaire Aggregation

# 1.1 Results of Questionnaire Survey to Management

## 1.1 Results of questionnaire survey to management

### 1.1 Results of Questionnaire Survey to Management

Region	Question about general factory workers				Question about workforce				Question about foreign workers			
	Male-female ratio	Retention rate (ave.)	Reason for job separation	Educational level required	Ability required	Sufficiency of workforce	Type of workers in short supply	Recruitment methods	No. of foreigners	Nationality	Reason for hiring foreign workers	Language expected to be acquired
1	3 : 7	1 yr - less than 2 yrs	Low salary Hard work Insufficient capacity	Graduation from ordinary high school or higher	Patience, knowledge of simple engineering and specialties, time management	Somewhat redundant	-	Introduction by former and present factory workers, recruitment by managers themselves	0-	-	-	-
2	4 : 1	3 yrs or longer	Low salary Others	Graduation from ordinary high school or higher	Patience, accuracy, and time management	Just right	-	Advertising and through staff agency	0-	-	-	-
3	6.5 : 3.5	Less than 3 months	Low salary Hard work Working long hours	Graduation from ordinary high school or higher	Stamina, patience and accuracy	Somewhat insufficient	General factory workers and factory workers having knowledge in engineering	Introduction by acquaintances of managers (personal connection), introduction by former and present factory workers, and through staff agency	0-	-	-	-
4	5 : 5	3 yrs or longer	Low salary Hard work	Graduation from ordinary high school or higher	Patience, accuracy and others (seriousness)	Somewhat insufficient	General factory workers	Advertising	0-	-	-	-
Central		Temporary workers: 1-2 yrs Regular employees: 3 yrs or longer	Others (return to hometown and job-switching)	Graduation from ordinary high school or higher	Patience, time management, and communication skills	Somewhat redundant	-	Through staff agency	0-	-	-	-
5	3 : 2	3 yrs or longer	Others (Engineers: self-improvement and wish to change environment. Plant workers: insufficient capacity and return to hometown)	Graduation from ordinary high school or higher	Accuracy, time management, and communication skills	Just right	-	Through staff agency	0-	-	-	-
6	3 : 1	1 yr - less than 2 yrs	Low salary Hard work Others	Nothing in particular	Accuracy, arithmetic (four arithmetic operations), time management	Somewhat insufficient	Plant workers having knowledge in engineering, and managers	Advertising, and through staff agency	0-	-	-	-
7	1 : 9	Less than 3 months	Low salary Others	Graduation from ordinary high school or higher	Accuracy Time management (absence)	Fairly insufficient	Plant workers having knowledge in engineering	Advertising, introduction by acquaintances of managers (personal connection) and through staff agency	7	Japan	-	-
8	3 : 7	3 months ~ less than 6 months	Low salary Want to go somewhere else Others	Graduation from ordinary high school or higher	Patience Accuracy Time management	Somewhat insufficient	Plant workers having knowledge in engineering	Advertising, introduction by former and present factory workers, and others	0-	-	-	-
9	1 : 9	3 yrs or longer	Low salary Want to go somewhere else Others	Graduation from ordinary high school or higher	Patience, communication skills, and nothing in particular	Somewhat insufficient	Plant workers having knowledge in engineering	Advertising, introduction by former and present factory workers, and through staff agency	0-	-	-	-
Eastern	5 : 5	3 yrs or longer	Poor facility environment Hard work	Graduation from secondary school or higher	Stamina, patience, and accuracy	Somewhat insufficient	General factory workers	Advertising, introduction by former and present factory workers, and recruitment by managers themselves	0-	-	-	-
10	9 : 1	6 months ~ less than 1 yr	Others	Graduation from ordinary high school or higher	Knowledge of simple engineering and specialties, arithmetic (four arithmetic operations), and others (compliance with corporate regulations and work procedures)	Somewhat insufficient	Plant workers having knowledge in engineering, and managers	Advertising, introduction by former and present factory workers, and recruitment by managers themselves	17	Japan	Non-response	That and English
Northeastern	1 : 4	Non-response	Working long hours Insufficient capacity	Graduation from technical junior college or higher	Patience, accuracy, arithmetic (four arithmetic operations)	Just right	-	Advertising	0-	-	-	-
13	3 : 1	Non-response	Working long hours Insufficient capacity	Graduation from technical junior college or higher	Patience, accuracy, arithmetic (four arithmetic operations)	Just right	-	Advertising	0-	-	-	-

Note 1: The questionnaire survey was conducted in June-July, 2012.

Note 2: The results of the questionnaire surveys that cannot specify respondent companies only.

Note 3: For options, see the questionnaire sheet.

# 1.1 Results of Questionnaire Survey to Management

## 1.1 Results of questionnaire survey to management

### 1.1 Result:

Region	Standard working time and wage of factory workers			Question about management								
	Hours/day	Days/week	Wage (THB./day)	Bonus (THB./year)	Impact of corporate tax and min. wage hike is greater.	Impact of raise in minimum wage on operating profit (Question A)	Impact of raise in minimum wage on big problem. (benchmark: -5 ~ -3%)	Impact of raise in minimum wage on big problem. (benchmark: -5 ~ -3%)	Impact of raise in minimum wage on big problem. (benchmark: -5 ~ -3%)	Impact of raise in minimum wage on big problem. (benchmark: -5 ~ -3%)	Impact of raise in minimum wage on big problem. (benchmark: -5 ~ -3%)	Matters to be taken into account when relocating company (Question to companies answering that they wish to move somewhere in/outside Thailand in Question B.)
Central	8	5	300	16,500	Impact of wage hike is greater.	There is some impact, but it is not a big problem. (benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (benchmark: -5 ~ -3%)	-
	8	5	320	25,000	Impact of wage hike is greater.	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	-
	8	5.5	302	15,000	Impact of wage hike is greater.	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	-
	8	5.5	300	16,500	Impact of wage hike is greater.	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	-
Eastern	9.5	5.5	356	24,000	Impact of wage hike is greater.	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	-
	10.5	5.8	520	44,000	Impact of wage hike is greater.	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	-
	8	5.5	265	10,203	Impact of wage hike is greater.	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	-
	Non-response	Non-response	Non-response	Non-response	Impact of wage hike is greater.	Non-response	Non-response	Non-response	Non-response	Non-response	Non-response	Non-response
Northeastern	8	5	264	8,712	Impact of wage hike is greater.	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	There is fairly substantial negative impact. (Benchmark: -10% or higher)	-
	8	6	300	65,813	Impact of wage hike is greater.	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	There is substantial negative impact. (Benchmark: -10 ~ -5%)	-
	8	6	310	59,000	Impact of wage hike is greater.	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	-
Northeastern	11	5.5	364	28,000	Impact of wage hike is greater.	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	There is not much impact. (Benchmark: around -2 ~ -1%)	-
	10	1530	255	12,465	Impact of wage hike is greater.	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	There is some impact, but it is not a big problem. (Benchmark: -5 ~ -3%)	-

Note 1: the questionnaire survey was conducted in June-July, 2012.

Note 2: the results of the questionnaire surveys that cannot specify respondent companies only.

Note 3: For options, see the questionnaire sheet.

## Request for Response to Questionnaire survey

- Survey conducted by the Japan International Cooperation Agency (JICA) –

This questionnaire survey takes around 15 minutes to complete and is intended to find out the situation of economic development and labor mobility in Thailand.

No information that could identify individuals is asked. Please cooperate.

### 1. Regarding Organization

1-1 What is the company's industrial area? Please mark a closest category from the following options (Please mark only one option).

001	Oil, Mining, Energy	013	Electronics, Electronic Equipment
002	Food	014	Conveyance , Conveyor Systems
003	Fiber, Textile Products	015	Measure, Instrumentations, Scientific Instrument
004	Timber, Wooden Products	016	Optical Instrument, Watch, Clock
005	Paper, Pulp	017	Medical Instrument
006	Chemicals	018	Noble Metal, Jewelry, Accessory
007	Synthetic Resins, Plastics	019	Sundries
008	Rubber, Rubber Products	020	Shoe, Footwear
009	Leather, Fur	021	Transport, Warehouse
010	Ceramics, Earth and Stone, Glass	022	Printing, Bookbinding
011	Steel, Nonferrous Metal, Hardware	023	Real Estate, Erection, Interior
012	Machinery	024	Environmental Protector, Waste

1-2 When did you commence the operation of factory?

Year
  Month

1-3 How many employees do you have to operate the factory?

Total			<u>Breakdown</u>	
			Administrative Staff	
			Factory (Line) Worker	
			Supervisor in Factory	

**2. Regarding Factory (Line) Worker**

※Following questions ask about the factory (line) workers you indicated in the answer for question 1-3.

2-1 How many percent of Male and Female workers are they? Please answer in approximate rate. (Please answer to total 100 percent)

Male	:	Female			
	%		%		

2-2 How long do employees work for the company in general?  
(Please mark only one option)

- ① Less than 3months      ② From 3 to 6 Months      ③ From 6 to 12 Months
- ④ From 1 to 2 Years      ⑤ From 2 to 3 Years      ⑥ Longer than 3 Years

2-3 What do you think the primary reason for them to leave the job here?  
(Please mark up to 3 options)

- ① Wage (inadequate for them)      ② Facilities      ③ Location
- ④ Regulations      ⑤ Heavy work      ⑥ Working hours
- ⑦ Inadequate capacity for the job      ⑧ Others

2-4 Which educational qualification does the job require from factory workers?  
(Please mark only one option)

- ① Junior High School      ② High School      ③ Technical High School
- ④ Technical Junior College      ⑤ University      ⑥ Not Specified

- 2-5 What kind of skills do you primarily require? (Please mark up to 3 options)
- ① Physical strength                      ② Patience                                      ③ Accuracy (manual dexterity)
  - ④ Basic engineering or technical knowledge (e.g. oiling machinery etc.)      ⑤ Math ( basic arithmetic operation)      ⑥ Engineering or technical knowledge
  - ⑦ Time management                      ⑧ Communication skills                      ⑨ Not specified
  - ⑩ Others

### 3. Regarding Workforce in the Company

※The following questions ask all workforce required in your company, not only line workers but also administrative staff as well as technicians.

- 3-1 It is said there is workforce shortage in Thailand. Is there currently sufficient workforce in your company? (Please mark only one option)

- ① Extremely insufficient                      ② Rather insufficient                      ③ Moderate  
 ④ Rather over sufficient                      ⑤ Extremely over sufficient

- 3-2 This question asks a respondent answering “① Extremely Insufficient” or “②A little Insufficient” in the question3-1above. In which positions is there the shortage of workforce? (Please mark as many as answers would match)

- ① Factory worker                      ② Supervisor in factory                      ③ Workers understanding basic engineering
- ④ Administrative staff                      ⑤ Manager                                      ⑥ Others

- 3-3 How do you mostly recruit factory workers? (Please mark up to 3 options)

- ① By adverting                                      ② Manager’s personal network                      ③ Introduction by current or former workers
- ④By managers visiting schools, events and etc for recruitment.                      ⑤ Recruiters/Agents                      ⑥ Others

### 4. Regarding Foreign Workforce

- 4-1 How many foreign workers other than Thai nationality? (if not any, please indicate “0” in the box below)

people

- 4-2 This question asks a respondent answering more than “1” in the question 4-1 above. What is/are the nationality are the foreigners?



(Please mark up to 3 options from the most to the least)

- ① The same nationality as investor's (if your company is foreign invested )
- ② Laos
- ③ Cambodia
- ④ Myanmar
- ⑤ Others

4-3 What makes you employ foreigners?

(Please mark as many as that answers match)

- ① Low wage
- ② Work well
- ③ High capacity
- ④ No reason to decline
- ⑤ Others

4-4 What language/s would your company require foreign workers to use in the office? (Please mark as many as answers would match)

- ① The mother tongue of investor's (if your company is foreign invested )
- ② Thai
- ③ English
- ④ Others

## 5. Regarding Organizational Management

5-1 How much is the average wage and working hours for factory workers?

hrs/d    
  d/wk    
  BHT/d

5-2 Do factory workers receive perks/bonus? If any, please indicate the average perks per year in the last 3 years.

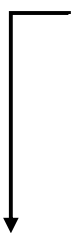
BHT/year

5-3 Which effects the company's financial management more, reduced corporate tax since Jan, 2012 or increased the minimum wage the last Apr? (Please mark only one option)

- ① Increased minimum wage
- ② Even
- ③ Reduced corporate tax

5-4 This question asks about the increased minimum wage. How much it effects the company's income? (Please mark only one option)

- ① Extremely negative impact given (more than minus 10%)
- ② Large negative impact given (from minus 10% to minus 5%)
- ③ Certain impact but not much bothering (from minus 5% to minus 3%)
- ④ Not much difference (minus 2% to minus 1%)
- ⑤ Not at all



5-5 This question asks a respondent answering “①Extremely negative impact given” or “② Large negative impact given” in the question 5-4 above. What do you think about production? (Please mark only one option)

- ① The same amount of production with an attempt of more investment on automation to reduce manpower
- ② Reduce production

- ③ Move factory to another location in Thailand. If so, to where?  
( North · East North · Central · South )
- ④ Move out from Thailand. If so, to where?  
( Somewhere in ASEAN · Outside of ASEAN )

5-6 This question asks a respondent answering “③Move factory to another location in Thailand” or “④Move out from Thailand” in the question 5-5 above.

What would you consider to move the factory?

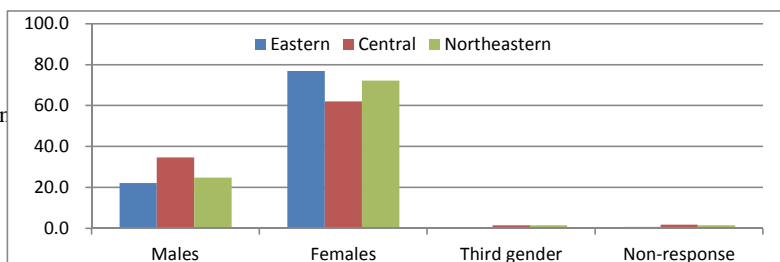
(Please mark as many as answers would match)

- ① Lower wage
- ② Workers' capacities
- ③ Workforce availability
- ④ Infrastructure
- ⑤ Easiness of owning premise
- ⑥ Tax benefits
- ⑦ Least risk of natural environment
- ⑧ Political stability
- ⑨ Accessibility to the market
- ⑩ Projection on market growth
- ⑪ Others

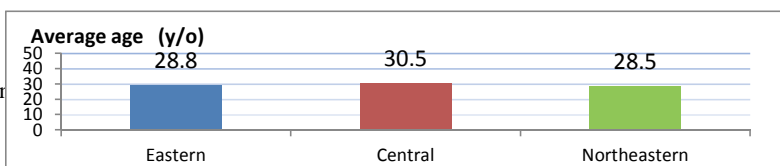
Thank you for your cooperation!

## 2.1 Simple tabulation of the results of questionnaire to factory workers (comparison of 3 regions)

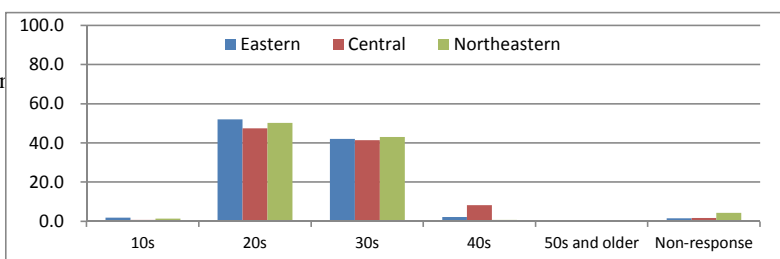
Gender	Eastern	Central	Northeastern
1 Males	22.2	34.6	24.8
2 Females	77.0	62.1	72.3
3 Third gender	0.0	1.4	1.5
4 Non-response	0.8	1.8	1.5



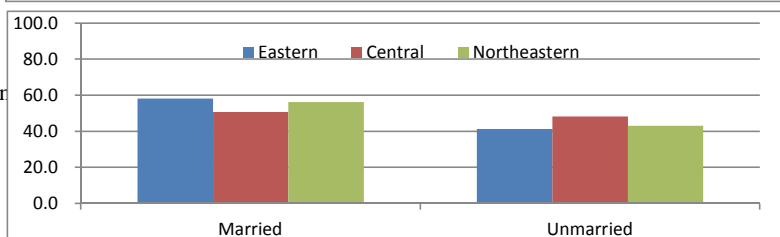
Average age	Eastern	Central	Northeastern
Average age	28.8	30.5	28.5



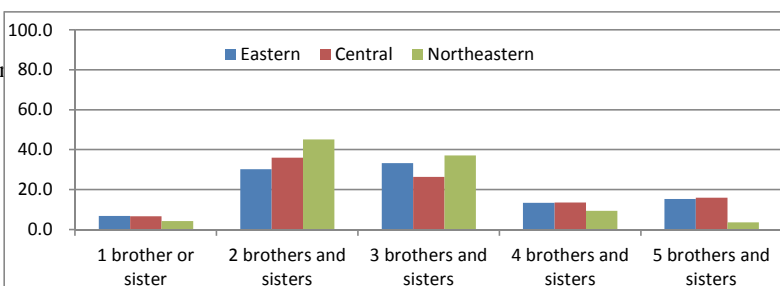
Age group	Eastern	Central	Northeastern
1 10s	1.9	0.7	1.5
2 20s	52.1	47.5	50.4
3 30s	42.1	41.4	43.1
4 40s	2.3	8.2	0.7
5 50s and older	0.0	0.4	0.0
6 Non-response	1.5	1.8	4.4



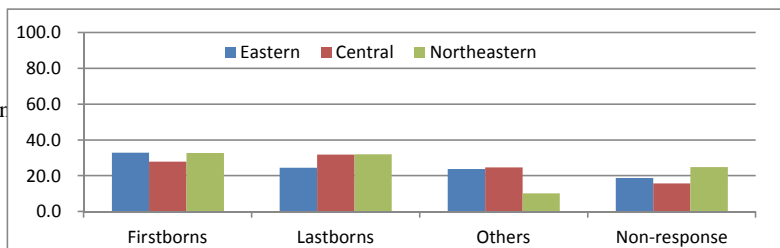
Marital status	Eastern	Central	Northeastern
1 Married	58.2	50.7	56.2
2 Unmarried	41.4	48.2	43.1
3 Non-response	0.4	1.1	0.7



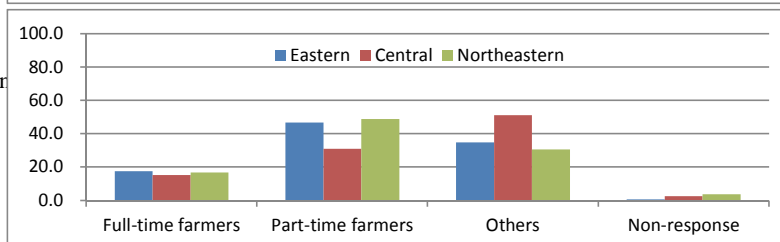
No. of brothers and sisters	Eastern	Central	Northeastern
1 1 brother or sister	6.9	6.8	4.4
2 2 brothers and sisters	30.3	36.1	45.3
3 3 brothers and sisters	33.3	26.4	37.2
4 4 brothers and sisters	13.4	13.6	9.5
5 5 brothers and sisters	15.3	16.1	3.6
6 Invalid responses	0.0	0.7	0.0
7 Non-response	0.8	0.4	0.0



Birth order of brothers and sisters	Eastern	Central	Northeastern
1 Firstborns	33.0	27.9	32.8
2 Lastborns	24.5	31.8	32.1
3 Others	23.8	24.6	10.2
4 Non-response	18.8	15.7	24.8

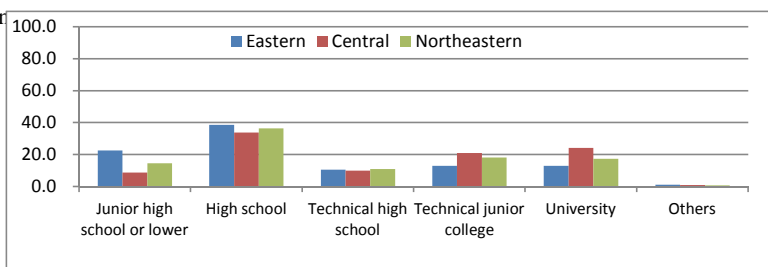


Occupation of parents	Eastern	Central	Northeastern
1 Full-time farmers	17.6	15.4	16.8
2 Part-time farmers	46.7	31.1	48.9
3 Others	34.9	51.1	30.7
4 Non-response	0.8	2.5	3.6

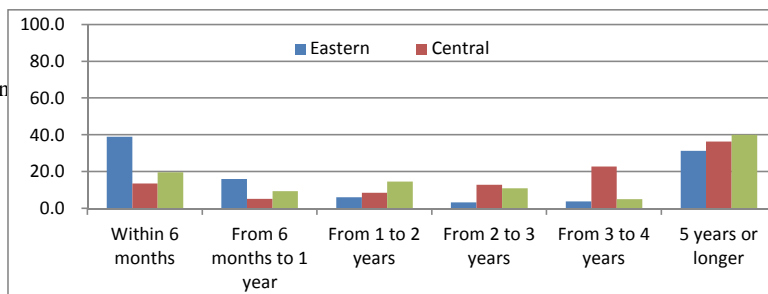


## 2.1 Simple tabulation of the results of questionnaire to factory workers (comparison of 3 regions)

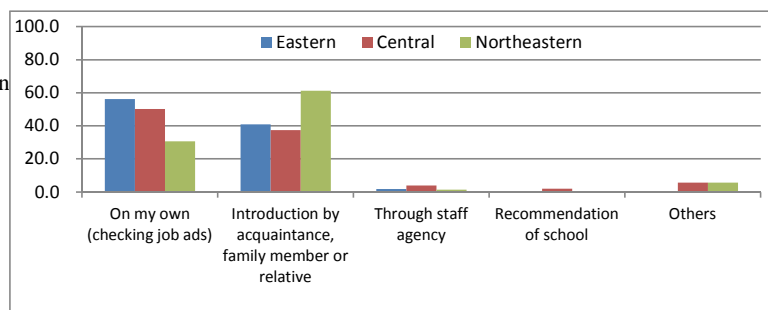
Educational background	Eastern	Central	Northeastern
1 Junior high school or lower	22.6	8.9	14.6
2 High school	38.7	33.9	36.5
3 Technical high school	10.7	10.0	10.9
4 Technical junior college	13.0	21.1	18.2
5 University	13.0	24.3	17.5
6 Others	1.1	1.1	0.7
7 Invalid responses	0.4	0.4	0.0
8 Non-response	0.4	0.4	1.5



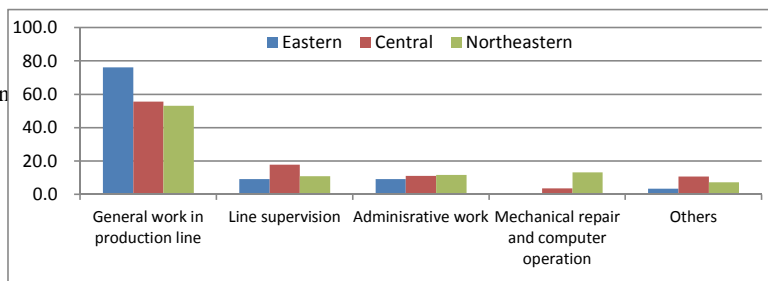
Years of service	Eastern	Central	Northeastern
1 Within 6 months	39.1	13.6	19.7
2 From 6 months to 1 year	16.1	5.4	9.5
3 From 1 to 2 years	6.1	8.6	14.6
4 From 2 to 3 years	3.4	12.9	10.9
5 From 3 to 4 years	3.8	22.9	5.1
6 5 years or longer	31.4	36.4	40.1
7 Non-response	0.0	0.4	0.0



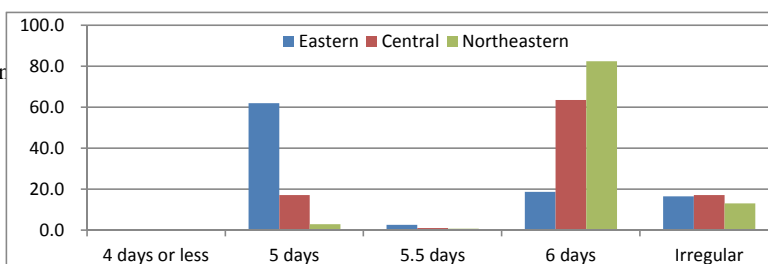
Way of finding the job	Eastern	Central	Northeastern
1 On my own (checking job ads)	56.3	50.4	30.7
2 Introduction by acquaintance, family member or relative	41.0	37.5	61.3
3 Through staff agency	1.9	3.9	1.5
4 Recommendation of school	0.0	2.1	0.0
5 Others	0.4	5.7	5.8
6 Non-response	0.4	0.4	0.7



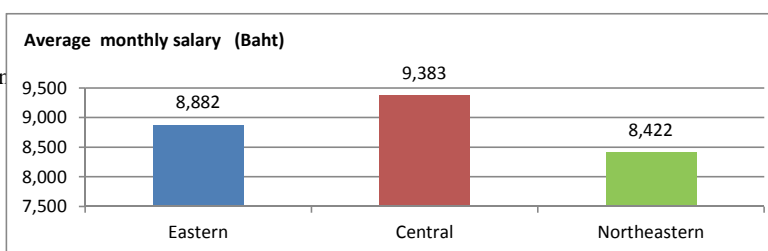
Major assignment	Eastern	Central	Northeastern
1 General work in production line	76.2	55.7	53.3
2 Line supervision	9.2	17.9	10.9
3 Administrative work	9.2	11.1	11.7
4 Mechanical repair and computer operation	0.8	3.6	13.1
5 Others	3.4	10.7	7.3
6 Non-response	1.1	1.1	3.6



No. of working days	Eastern	Central	Northeastern
1 4 days or less	0.0	0.0	0.0
2 5 days	62.1	17.1	2.9
3 5.5 days	2.7	1.1	0.7
4 6 days	18.8	63.6	82.5
5 Irregular	16.5	17.1	13.1
6 Non-response	0.0	1.1	0.7

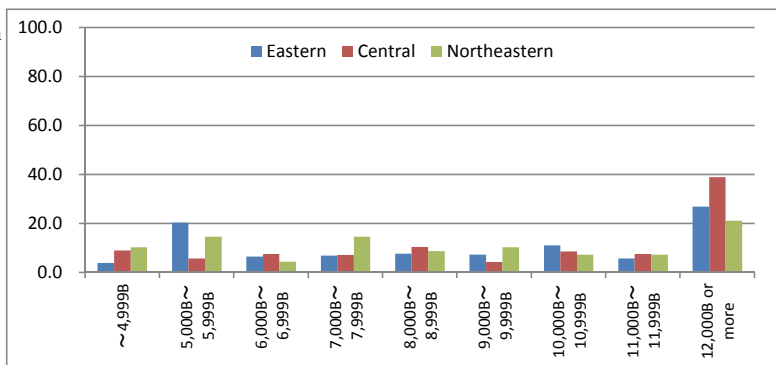


Average monthly salary	Eastern	Central	Northeastern
Average monthly salary	8,882	9,383	8,422

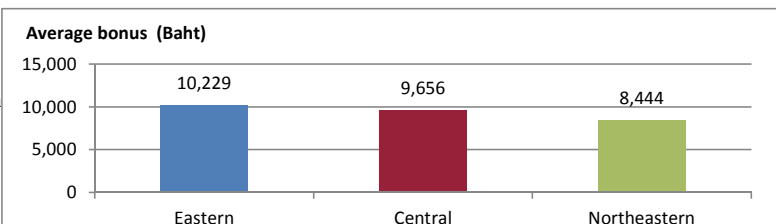


## 2.1 Simple tabulation of the results of questionnaire to factory workers (comparison of 3 regions)

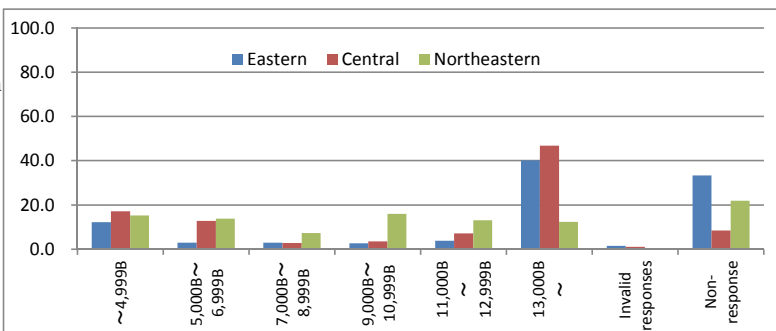
Monthly salary	Eastern	Central	Northeastern
1 ~4,999B	3.8	8.9	10.2
2 5,000B~5,999B	20.3	5.7	14.6
3 6,000B~6,999B	6.5	7.5	4.4
4 7,000B~7,999B	6.9	7.1	14.6
5 8,000B~8,999B	7.7	10.4	8.8
6 9,000B~9,999B	7.3	4.3	10.2
7 10,000B~10,999B	11.1	8.6	7.3
8 11,000B~11,999B	5.7	7.5	7.3
9 12,000B or more	26.8	38.9	21.2
10 Non-response	3.8	1.1	1.5



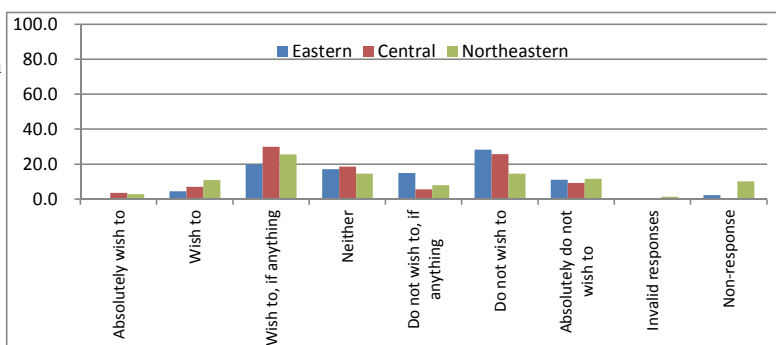
Average bonus	Eastern	Central	Northeastern
Average bonus	10,229	9,656	8,444



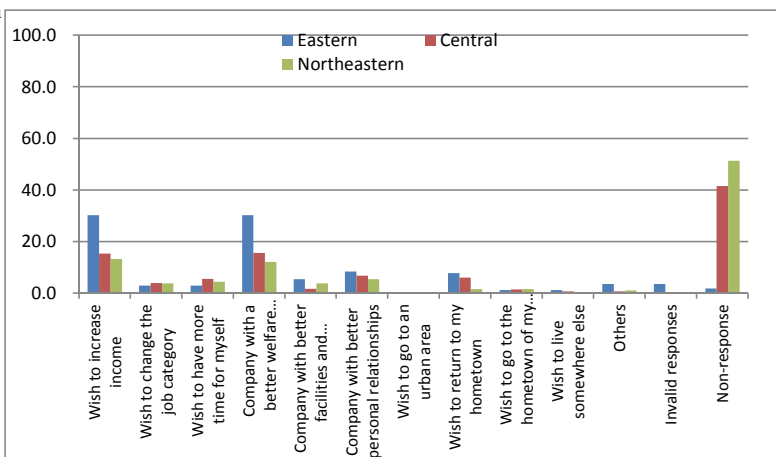
Bonus	Eastern	Central	Northeastern
1 ~4,999B	12.3	17.1	15.3
2 5,000B~6,999B	3.1	12.9	13.9
3 7,000B~8,999B	3.1	2.9	7.3
4 9,000B~10,999B	2.7	3.6	16.1
5 11,000B~12,999B	3.8	7.1	13.1
6 13,000B~	40.2	46.8	12.4
7 Invalid responses	1.5	1.1	0.0
8 Non-response	33.3	8.6	21.9



Wish to change the job	Eastern	Central	Northeastern
1 Absolutely wish to	0.8	3.6	2.9
2 Wish to	4.6	7.1	10.9
3 Wish to, if anything	19.9	30.0	25.5
4 Neither	17.2	18.6	14.6
5 Do not wish to, if anything	14.9	5.7	8.0
6 Do not wish to	28.4	25.7	14.6
7 Absolutely do not wish to	11.1	9.3	11.7
8 Invalid responses	0.8	0.0	1.5
9 Non-response	2.3	0.0	10.2



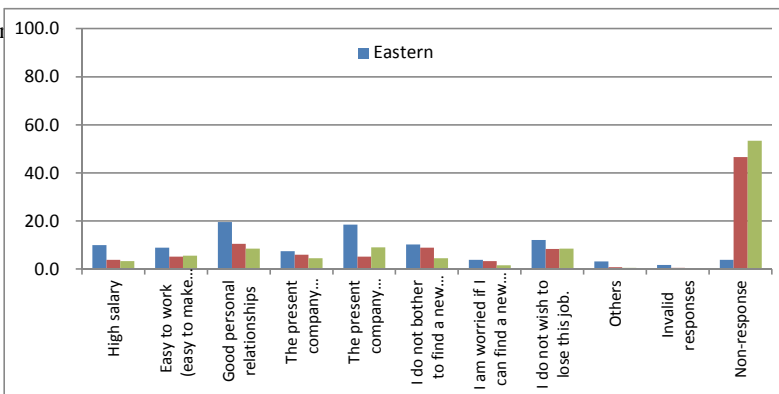
Reasons of wishing to change the job (choose up to 3 options)	Eastern	Central	Northeastern
1 Wish to increase income	30.3	15.4	13.3
2 Wish to change the job category	3.0	4.0	3.9
3 Wish to have more time for myself	3.0	5.5	4.4
4 Company with a better welfare scheme	30.3	15.6	12.2
5 Company with better facilities and building services	5.5	1.8	3.9
6 Company with better personal relationship	8.5	6.8	5.5
7 Wish to go to an urban area	0.0	0.0	0.0
8 Wish to return to my hometown	7.9	6.0	1.7
9 Wish to go to the hometown of my partner (spouse)	1.2	1.5	1.7
10 Wish to live somewhere else	1.2	0.8	0.6
11 Others	3.6	0.8	1.1
12 Invalid responses	3.6	0.3	0.6
13 Non-response	1.8	41.6	51.4



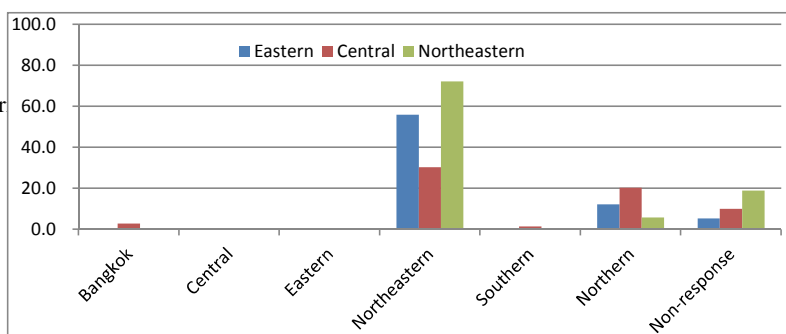
## 2.1 Simple tabulation of the results of questionnaire to factory workers (comparison of 3 regions)

### Reasons of not wishing to change the job

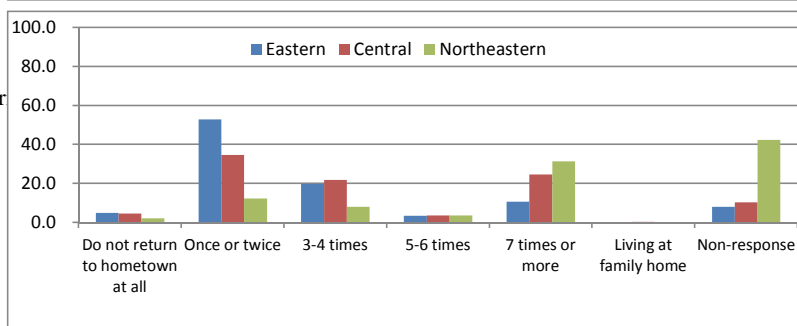
(choose up to 3 options)	Eastern	Central	Northeastern
1 High salary	10.0	4.0	3.4
2 Easy to work (easy to make a balance between private and working lives)	8.9	5.3	5.7
3 Good personal relationships	19.6	10.6	8.5
4 The present company values my ability and...	7.5	6.1	4.5
5 The present company enables me to improve my ability and skills.	18.6	5.3	9.1
6 I do not bother to find a new job.	10.4	9.0	4.5
7 I am worried if I can find a new job.	3.9	3.4	1.7
8 I do not wish to lose this job.	12.1	8.4	8.5
9 Others	3.2	0.8	0.6
10 Invalid responses	1.8	0.5	0.0
11 Non-response	3.9	46.7	53.4



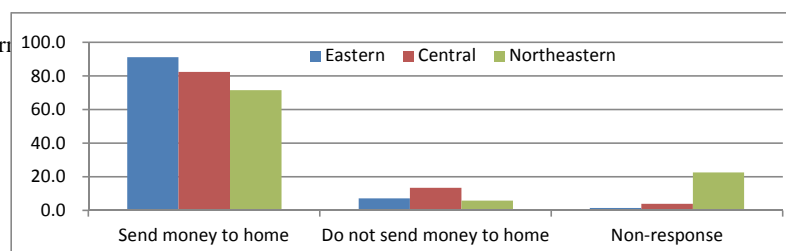
Native region	Eastern	Central	Northeastern
1 Bangkok	0.4	2.9	0.0
2 Central	#REF!	#REF!	#REF!
3 Eastern	#REF!	#REF!	#REF!
4 Northeastern	55.9	30.4	72.3
5 Southern	0.4	1.4	0.0
6 Northern	12.3	20.4	5.8
7 Non-response	5.4	10.0	19.0



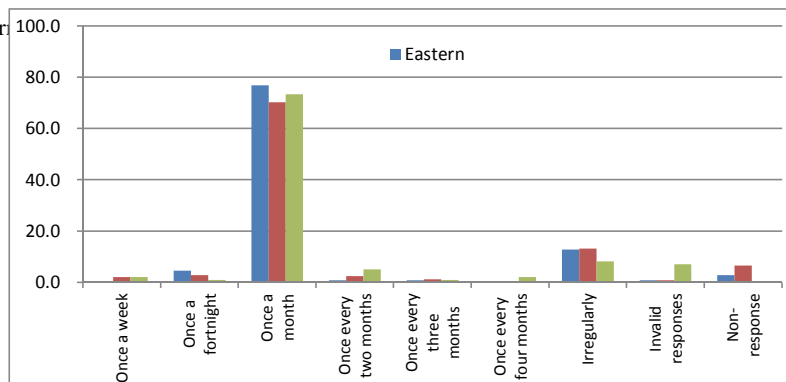
Frequency to return to hometown	Eastern	Central	Northeastern
1 Do not return to hometown at all	5.0	4.6	2.2
2 Once or twice	52.9	34.6	12.4
3 3-4 times	19.9	21.8	8.0
4 5-6 times	3.4	3.6	3.6
5 7 times or more	10.7	24.6	31.4
6 Living at family home	0.0	0.4	0.0
7 Non-response	8.0	10.4	42.3



Whether to send money to home	Eastern	Central	Northeastern
1 Send money to home	91.2	82.5	71.5
2 Do not send money to home	7.3	13.6	5.8
3 Non-response	1.5	3.9	22.6

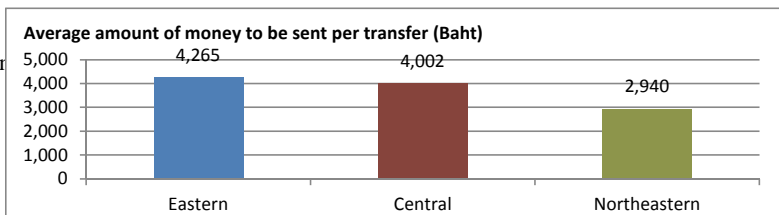


Frequency of sending money to home	Eastern	Central	Northeastern
1 Once a week	0.4	2.1	2.0
2 Once a fortnight	4.5	2.9	1.0
3 Once a month	76.9	70.2	73.5
4 Once every two months	0.8	2.5	5.1
5 Once every three months	0.8	1.2	1.0
6 Once every four months	0.0	0.4	2.0
7 Irregularly	12.8	13.2	8.2
8 Invalid responses	0.8	0.8	7.1
9 Non-response	2.9	6.6	0.0

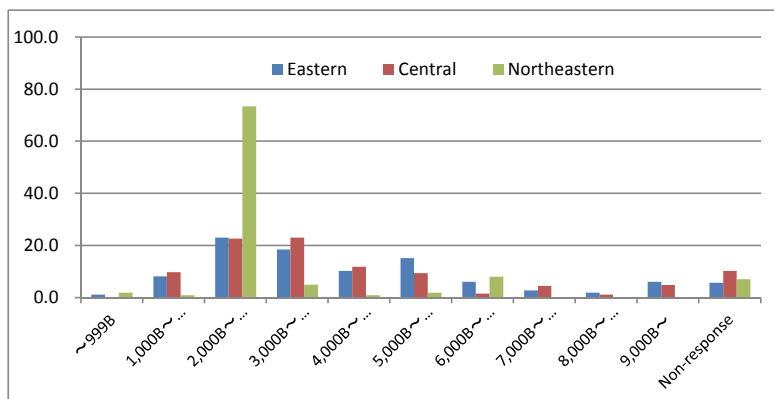


2.1 Simple tabulation of the results of questionnaire to factory workers (comparison of 3 regions)

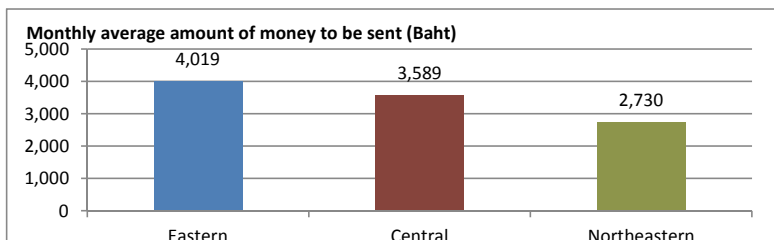
	Eastern	Central	Northeastern
Average amount of money to be sent per transfer	4,265	4,002	2,940



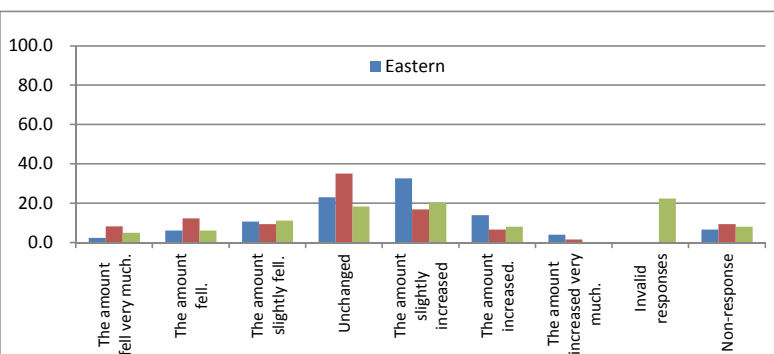
Amount of money to be sent per transfer	Eastern	Central	Northeastern
1 ~999B	1.2	0.0	2.0
2 1,000B~1,999B	8.3	9.9	1.0
3 2,000B~2,999B	23.1	22.7	73.5
4 3,000B~3,999B	18.6	23.1	5.1
5 4,000B~4,999B	10.3	12.0	1.0
6 5,000B~5,999B	15.3	9.5	2.0
7 6,000B~6,999B	6.2	1.7	8.2
8 7,000B~7,999B	2.9	4.5	0.0
9 8,000B~8,999B	2.1	1.2	0.0
10 9,000B~	6.2	5.0	0.0
11 Non-response	5.8	10.3	7.1



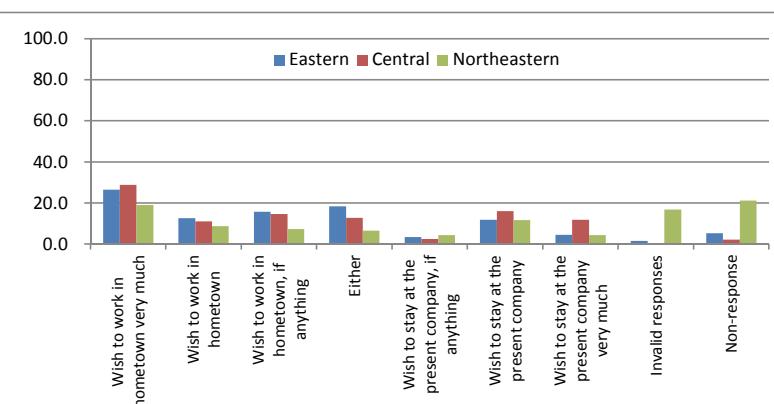
	Eastern	Central	Northeastern
Monthly average amount of money to be sent	4,019	3,589	2,730



Change in the amount of money to be sent	Eastern	Central	Northeastern
1 The amount fell very much.	2.5	8.3	5.1
2 The amount fell.	6.2	12.4	6.1
3 The amount slightly fell.	10.7	9.5	11.2
4 Unchanged	23.1	35.1	18.4
5 The amount slightly increased	32.6	16.9	20.4
6 The amount increased.	14.0	6.6	8.2
7 The amount increased very much.	4.1	1.7	0.0
8 Invalid responses	0.0	0.0	22.4
9 Non-response	6.6	9.5	8.2



Intention to return to hometown	Eastern	Central	Northeastern
1 Wish to work in hometown very much	26.4	28.9	19.0
2 Wish to work in hometown	12.6	11.1	8.8
3 Wish to work in hometown, if anything	15.7	14.6	7.3
4 Either	18.4	12.9	6.6
5 Wish to stay at the present company, if anything	3.4	2.5	4.4
6 Wish to stay at the present company	11.9	16.1	11.7
7 Wish to stay at the present company very much	4.6	11.8	4.4
8 Invalid responses	1.5	0.0	16.8
9 Non-response	5.4	2.1	21.2



## 2.2 Cross tabulation of the results of questionnaire to factory workers

Factory location x Hometown

10		Total	1. Bangkok	2. Central	3. Eastern	4. Northeastern	5. Southern	6. Northern	7. Non-response
Overall		678 (100.0)	9 (1.3)	99 (14.6)	70 (10.3)	330 (48.7)	5 (0.7)	97 (14.3)	68 (10.0)
Factory location	1. Central/within industrial park	280 (100.0)	8 (2.9)	91 (32.5)	7 (2.5)	85 (30.4)	4 (1.4)	57 (20.4)	28 (10.0)
	2. Eastern/within industrial park	261 (100.0)	1 (0.4)	5 (1.9)	62 (23.8)	146 (55.9)	1 (0.4)	32 (12.3)	14 (5.4)
	3. Northeastern/within industrial park	37 (100.0)	0 (0.0)	2 (5.4)	0 (0.0)	34 (91.9)	0 (0.0)	1 (2.7)	0 (0.0)
	4. Northeastern/outside industrial park	100 (100.0)	0 (0.0)	1 (1.0)	1 (1.0)	65 (65.0)	0 (0.0)	7 (7.0)	26 (26.0)

Note: The figures in parentheses are ratios to the total number of samples.

Factory location x Years of service

4		Total	1. Within 6 months	2. From 6 months to 1	3. From 1 to 2 years	4. From 2 to 3 years	5. From 3 to 4 years	6. 5 years or longer	7. Non-response
Overall		678 (100.0)	167 (24.6)	70 (10.3)	60 (8.8)	60 (8.8)	81 (11.9)	239 (35.3)	1 (0.1)
Factory location	1. Central/within industrial park	280 (100.0)	38 (13.6)	15 (5.4)	24 (8.6)	36 (12.9)	64 (22.9)	102 (36.4)	1 (0.4)
	2. Eastern/within industrial park	261 (100.0)	102 (39.1)	42 (16.1)	16 (6.1)	9 (3.4)	10 (3.8)	82 (31.4)	0 (0.0)
	3. Northeastern/within industrial park	37 (100.0)	17 (45.9)	9 (24.3)	3 (8.1)	6 (16.2)	2 (5.4)	0 (0.0)	0 (0.0)
	4. Northeastern/outside industrial park	100 (100.0)	10 (10.0)	4 (4.0)	17 (17.0)	9 (9.0)	5 (5.0)	55 (55.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

Hometown x Intension to return to hometown

9		Total	Wish to work in hometown	Either	Wish to stay at the present company	Invalid responses	Non-response
Overall		678 (100.0)	344 (50.7)	93 (13.7)	165 (24.3)	27 (4.0)	49 (7.2)
Hometown	1. Bangkok	9 (100.0)	2 (22.2)	1 (11.1)	6 (66.7)	0 (0.0)	0 (0.0)
	2. Central	99 (100.0)	43 (43.4)	14 (14.1)	39 (39.4)	0 (0.0)	3 (3.0)
	3. Eastern	70 (100.0)	34 (48.6)	11 (15.7)	20 (28.6)	1 (1.4)	4 (5.7)
	4. Northeastern	330 (100.0)	167 (50.6)	48 (14.5)	70 (21.2)	25 (7.6)	20 (6.1)
	5. Southern	5 (100.0)	2 (40.0)	1 (20.0)	2 (40.0)	0 (0.0)	0 (0.0)
	6. Northern	97 (100.0)	63 (64.9)	12 (12.4)	17 (17.5)	1 (1.0)	4 (4.1)
	7. Non-response	68 (100.0)	33 (48.5)	6 (8.8)	11 (16.2)	0 (0.0)	18 (26.5)

Note: The figures in parentheses are ratios to the total number of samples.

Hometown x Amount of money to be sent to hometown (monthly average)

1		Total (¥)	1. Amount of money to be sent to hometown (B)
Overall		422 (100.0)	3,804 (100.0)
Hometown	1. Bangkok	7 (1.7)	5,071 (133.3)
	2. Central	54 (12.8)	3,773 (99.2)
	3. Eastern	40 (9.5)	4,267 (112.2)
	4. Northeastern	226 (53.6)	3,724 (97.9)
	5. Southern	2 (0.5)	7,250 (190.6)
	6. Northern	61 (14.5)	3,783 (99.4)
	7. Non-response	32 (7.6)	3,395 (89.2)

※ The number of samples with all the responses of "Whether to send money to home", "Amount of money to be sent to hometown" and "Frequency of sending money to hometown".

Note: The figures in parentheses are ratios to the total number of samples.

Hometown x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		678 (100.0)	209 (30.8)	197 (29.1)	145 (21.4)	127 (18.7)
Hometown	1. Bangkok	9 (100.0)	4 (44.4)	3 (33.3)	1 (11.1)	1 (11.1)
	2. Central	99 (100.0)	31 (31.3)	21 (21.2)	32 (32.3)	15 (15.2)
	3. Eastern	70 (100.0)	22 (31.4)	14 (20.0)	14 (20.0)	20 (28.6)
	4. Northeastern	330 (100.0)	105 (31.8)	99 (30.0)	73 (22.1)	53 (16.1)
	5. Southern	5 (100.0)	0 (0.0)	3 (60.0)	2 (40.0)	0 (0.0)
	6. Northern	97 (100.0)	27 (27.8)	39 (40.2)	15 (15.5)	16 (16.5)
	7. Non-response	68 (100.0)	20 (29.4)	18 (26.5)	8 (11.8)	22 (32.4)

Note: The figures in parentheses are ratios to the total number of samples.



## 2.2 Cross tabulation of the results of questionnaire to factory workers

Years of service x Wish to change the job

6		Total	1. Absolutely wish to	2. Wish to	3. Wish to, if anything	4. Neither	5. Do not wish to, if anything	6. Do not wish to	7. Absolutely do not wish to	8. Invalid responses	9. Non-response
Overall		678 (100.0)	234 (34.5)			117 (17.3)		303 (44.7)		4 (0.0)	20 (100.0)
Years of service	1. Within 6 months	167 (100.0)	50 (29.9)			41 (24.6)		70 (41.9)		0 (0.0)	6 (30.0)
	2. From 6 months to 1 year	70 (100.0)	22 (31.4)			11 (15.7)		31 (44.3)		2 (50.0)	4 (20.0)
	3. From 1 to 2 years	60 (100.0)	24 (40.0)			7 (11.7)		24 (40.0)		1 (25.0)	4 (20.0)
	4. From 2 to 3 years	60 (100.0)	23 (38.3)			11 (18.3)		25 (41.7)		0 (0.0)	1 (5.0)
	5. From 3 to 4 years	81 (100.0)	39 (48.1)			15 (18.5)		27 (33.3)		0 (0.0)	0 (0.0)
	6. 5 years or longer	239 (100.0)	76 (31.8)			32 (13.4)		125 (52.3)		1 (25.0)	5 (25.0)
	7. Non-response	1 (100.0)	0 (0.0)			0 (0.0)		1 (100.0)		0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

Years of service x Income

		Total	1. Annual income (¥1)
Overall		529 (100.0)	121,035 (100.0)
Years of service	1. Within 6 months	52 (24.6)	98,644 (81.5)
	2. From 6 months to 1 year	47 (10.3)	100,543 (83.1)
	3. From 1 to 2 years	59 (8.8)	111,356 (92.0)
	4. From 2 to 3 years	58 (8.8)	110,466 (91.3)
	5. From 3 to 4 years	77 (11.9)	125,292 (103.5)
	6. 5 years or longer	235 (35.3)	133,809 (110.6)
	7. Non-response	1 (0.1)	103,000 (85.1)

※1 Data on annual incomes are collected only from respondents giving both monthly salary and bonus. An annual income is calculated by multiplying the monthly salary by 12 and adding bonus.  
Note: The figures in parentheses are the numbers of samples or the ratios to the whole annual income.

Age group x Educational background

7		Total	1. Junior high school or lower	2. High school	3. Technical high school	4. Technical junior college	5. University	6. Others	7. Invalid responses	8. Non-response
Overall		678 (100.0)	104 (15.3)	246 (36.3)	71 (10.5)	118 (17.4)	126 (18.6)	7 (1.0)	2 (0.3)	4 (0.6)
Years of service	1. 10s	9 (100.0)	2 (22.2)	5 (55.6)	2 (22.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	2. 20s	338 (100.0)	45 (13.3)	115 (34.0)	39 (11.5)	70 (20.7)	64 (18.9)	2 (0.6)	1 (0.3)	2 (0.6)
	3. 30s	285 (100.0)	51 (17.9)	108 (37.9)	22 (7.7)	45 (15.8)	52 (18.2)	5 (1.8)	0 (0.0)	2 (0.7)
	4. 40s	30 (100.0)	3 (10.0)	11 (36.7)	5 (16.7)	3 (10.0)	7 (23.3)	0 (0.0)	1 (3.3)	0 (0.0)
	5. 50 years old or older	1 (100.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	6. Non-response	15 (100.0)	2 (13.3)	7 (46.7)	3 (20.0)	0 (0.0)	3 (20.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

Age group x Average amount of money to be sent to hometown

8		Total (¥)	1. Amount of money to be sent to hometown (B)
Overall		422 (100.0)	3,804 (100.0)
Years of service	1. 10s	5 (1.2)	2,900 (76.2)
	2. 20s	223 (52.8)	3,666 (96.4)
	3. 30s	173 (41.0)	3,993 (105.0)
	4. 40s	16 (3.8)	3,945 (103.7)
	5. 50 years old or older	0 (0.0)	N.A.
	6. Non-response	5 (1.2)	3,900 (102.5)

※ The number of samples with all the responses of "Whether to send money to home", "Amount of money to be sent to hometown" and "Frequency of sending money to hometown".  
Note: The figures in parentheses are ratios to the total number of samples.

Gender x Hometown

		Total	1. Bangkok	2. Central	3. Eastern	4. Northeastern	5. Southern	6. Northern	7. Non-response
Overall		678 (100.0)	9 (100.0)	99 (100.0)	70 (100.0)	330 (100.0)	5 (100.0)	97 (100.0)	68 (100.0)
Gender	1. Males	189 (27.9)	6 (66.7)	28 (28.4)	20 (28.6)	93 (28.2)	2 (40.0)	27 (27.8)	13 (19.1)
	2. Females	474 (69.9)	3 (33.3)	65 (68.0)	50 (71.4)	231 (70.0)	3 (60.0)	69 (71.1)	53 (77.9)
	3. Third gender	6 (0.9)	0 (0.0)	2 (1.2)	0 (0.0)	2 (0.6)	0 (0.0)	1 (1.0)	1 (1.5)
	4. Non-response	9 (1.3)	0 (0.0)	4 (2.4)	0 (0.0)	4 (1.2)	0 (0.0)	0 (0.0)	1 (1.5)

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

Gender x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		678 (100.0)	209 (100.0)	197 (100.0)	145 (100.0)	127 (100.0)
Gender	1. Males	189 (27.9)	55 (26.3)	62 (31.5)	41 (28.3)	31 (24.4)
	2. Females	474 (69.9)	150 (71.8)	133 (67.5)	99 (68.3)	92 (72.4)
	3. Third gender	6 (0.9)	2 (1.0)	0 (0.0)	3 (2.1)	1 (0.8)
	4. Non-response	9 (1.3)	2 (1.0)	2 (1.0)	2 (1.4)	3 (2.4)

Note: The figures in parentheses are ratios to the total number of samples.

Gender x Wish to return to hometown

		Total	1. Wish to work in hometown very much	2. Wish to work in hometown	3. Wish to work in hometown, if anything	4. Either	5. Wish to stay at the present company, if anything	6. Wish to stay at the present company	7. Wish to stay at the present company very much	8. Invalid responses	9. Non-response
Overall		678 (100.0)	176 (100.0)	76 (100.0)	92 (100.0)	93 (100.0)	22 (100.0)	92 (100.0)	51 (100.0)	27 (100.0)	49 (100.0)
Gender	1. Males	189 (27.9)	52 (29.5)	16 (21.1)	27 (29.3)	22 (23.7)	4 (18.2)	28 (30.4)	19 (37.3)	17 (63.0)	4 (8.2)
	2. Females	474 (69.9)	122 (69.3)	60 (78.9)	63 (68.5)	70 (75.3)	16 (72.7)	62 (67.4)	27 (52.9)	10 (37.0)	44 (89.8)
	3. Third gender	6 (0.9)	0 (0.0)	0 (0.0)	1 (1.1)	0 (0.0)	0 (0.0)	2 (2.2)	2 (3.9)	0 (0.0)	1 (2.0)
	4. Non-response	9 (1.3)	2 (1.1)	0 (0.0)	1 (1.1)	1 (1.1)	1 (9.1)	2 (0.0)	3 (5.9)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

### By region (Eastern)

#### Hometown x Intention to return to hometown

		Total	Wish to work in hometown	Either	Wish to stay at the present company	Invalid	Non-response
Overall		261 (100.0)	143 (54.8)	48 (18.4)	52 (19.9)	4 (1.5)	14 (5.4)
Hometown	1. Bangkok	1 (100.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)
	2. Central	5 (100.0)	2 (40.0)	2 (40.0)	1 (20.0)	0 (0.0)	0 (0.0)
	3. Eastern	62 (100.0)	29 (46.8)	10 (16.1)	18 (29.0)	1 (1.6)	4 (6.5)
	4. Northeastern	146 (100.0)	83 (56.8)	27 (18.5)	27 (18.5)	3 (2.1)	6 (4.1)
	5. Southern	1 (100.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	6. Northern	32 (100.0)	20 (62.5)	6 (18.8)	4 (12.5)	0 (0.0)	2 (6.3)
	7. Non-response	14 (100.0)	8 (57.1)	3 (21.4)	1 (7.1)	0 (0.0)	2 (14.3)

Note: The figures in parentheses are ratios to the total number of samples.

#### Hometown x Amount of money to be sent to hometown (monthly average)

		Total (※)	1. Amount of money to be sent to
Overall		173 (100.0)	4,047 (100.0)
Hometown	1. Bangkok	1 (0.6)	4,500 (111.2)
	2. Central	2 (1.2)	3,500 (86.5)
	3. Eastern	34 (19.7)	4,353 (107.6)
	4. Northeastern	105 (60.7)	3,907 (96.6)
	5. Southern	1 (0.6)	5,500 (135.9)
	6. Northern	20 (11.6)	4,175 (103.2)
	7. Non-response	10 (5.8)	4,133 (102.1)

※ The number of samples with all the responses of "Whether to send money to home", "Amount of money to be sent to hometown" and "Frequency of sending money to hometown"  
Note: The figures in parentheses are ratios to the total number of samples.

#### Hometown x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		261 (100.0)	86 (33.0)	64 (24.5)	62 (23.8)	49 (18.8)
Hometown	1. Bangkok	1 (100.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
	2. Central	5 (100.0)	3 (60.0)	1 (20.0)	0 (0.0)	1 (20.0)
	3. Eastern	62 (100.0)	19 (30.6)	13 (21.0)	13 (21.0)	17 (27.4)
	4. Northeastern	146 (100.0)	47 (32.2)	37 (25.3)	42 (28.8)	20 (13.7)
	5. Southern	1 (100.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)
	6. Northern	32 (100.0)	12 (37.5)	8 (25.0)	5 (15.6)	7 (21.9)
	7. Non-response	14 (100.0)	4 (28.6)	4 (28.6)	2 (14.3)	4 (28.6)

Note: The figures in parentheses are ratios to the total number of samples.

#### Years of service x Wish to change the job

		Total	1. Wish to change the job	2. Neither	3. Do not wish to change the job	4. Invalid responses	5. Non-response
Overall		261 (100.0)	66 (25.3)	45 (17.2)	142 (54.4)	2 (0.8)	6 (2.3)
Years of service	1. Within 6 months	102 (100.0)	23 (22.5)	24 (23.5)	54 (52.9)	0 (0.0)	1 (1.0)
	2. From 6 months to 1 year	42 (100.0)	12 (28.6)	5 (11.9)	20 (47.6)	1 (2.4)	4 (9.5)
	3. From 1 to 2 years	16 (100.0)	3 (18.8)	0 (0.0)	12 (75.0)	0 (0.0)	1 (6.3)
	4. From 2 to 3 years	9 (100.0)	2 (22.2)	3 (33.3)	4 (44.4)	0 (0.0)	0 (0.0)
	5. From 3 to 4 years	10 (100.0)	4 (40.0)	1 (10.0)	5 (50.0)	0 (0.0)	0 (0.0)
	6. 5 years or longer	82 (100.0)	22 (26.8)	12 (14.6)	47 (57.3)	0 (0.0)	0 (0.0)
	7. Non-response	0 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.2)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

Years of service x Bonus

		Total	1. Bonus
Overall		261 (100.0)	10,276
Years of service	1. Within 6 months	102 (39.1)	6,750 (65.7)
	2. From 6 months to 1 year	42 (16.1)	5,904 (57.5)
	3. From 1 to 2 years	16 (6.1)	10,531 (102.5)
	4. From 2 to 3 years	9 (3.4)	12,125 (118.0)
	5. From 3 to 4 years	10 (3.8)	11,850 (115.3)
	6. 5 years or longer	82 (31.4)	12,445 (121.1)
	7. Non-response	0 (0.0)	0 (0.0)

Years of service x Income

		Total	1. Monthly salary	2. Bonus	3. Annual income (※2)
Overall		261 (100.0)	8,882 (100.0)	6,693 (100.0)	109,199 (100.0)
Years of service	1. Within 6 months	102 (39.1)	7,625 (85.8)	1,853 (27.7)	84,382 (77.3)
	2. From 6 months to 1 year	42 (16.1)	8,440 (95.0)	3,655 (54.6)	104,940 (96.1)
	3. From 1 to 2 years	16 (6.1)	9,469 (106.6)	10,531 (157.3)	124,156 (113.7)
	4. From 2 to 3 years	9 (3.4)	10,389 (117.0)	10,778 (161.0)	135,444 (124.0)
	5. From 3 to 4 years	10 (3.8)	8,950 (100.8)	11,850 (177.1)	119,250 (109.2)
	6. 5 years or longer	82 (31.4)	10,232 (115.2)	12,445 (185.9)	135,226 (123.8)
	7. Non-response	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

※1 Data on annual incomes are collected only from respondents giving both monthly salary and bonus. An annual income is calculated by multiplying the monthly salary by 12 and adding bonus.

Note: The figures in parentheses are the numbers of samples or the ratios to the whole annual income.

Years of service x Income

		Total	1. Annual income (※1)
Overall		170 (100.0)	123,218 (100.0)
Years of service	1. Within 6 months	28 (4.0)	99,750 (81.0)
	2. From 6 months to 1 year	26 (7.4)	108,135 (87.8)
	3. From 1 to 2 years	16 (6.8)	124,156 (100.8)
	4. From 2 to 3 years	8 (4.6)	134,375 (109.1)
	5. From 3 to 4 years	10 (7.1)	119,250 (96.8)
	6. 5 years or longer	82 (70.1)	135,226 (109.7)
	7. Non-response	0 (0.0)	0 (0.0)

※1 Data on annual incomes are collected only from respondents giving both monthly salary and bonus. An annual income is calculated by multiplying the monthly salary by 12 and adding bonus.

Note: The figures in parentheses are the numbers of samples or the ratios to the whole annual income.

Age group x Educational background

7		Total	1. Junior high school or lower	2. High school	3. Technical high school	4. Technical junior college	5. University	6. Others	7. Invalid responses	8. Non-response
Overall		261 (100.0)	59 (22.6)	101 (38.7)	28 (10.7)	34 (13.0)	34 (13.0)	3 (1.1)	1 (0.4)	1 (0.4)
Years of service	1. 10s	5 (100.0)	2 (40.0)	2 (50.0)	1 (20.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (20.0)
	2. 20s	136 (100.0)	27 (19.9)	50 (36.8)	18 (13.2)	20 (14.7)	18 (13.2)	2 (1.5)	0 (0.0)	0 (0.0)
	3. 30s	110 (100.0)	28 (25.5)	45 (40.9)	8 (7.3)	14 (12.7)	14 (12.7)	1 (0.9)	0 (0.0)	0 (0.0)
	4. 40s	6 (100.0)	1 (16.7)	2 (33.3)	1 (16.7)	0 (0.0)	1 (16.7)	0 (0.0)	1 (16.7)	0 (0.0)
	5. 50 years old or older	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	6. Non-response	4 (100.0)	1 (25.0)	2 (50.0)	0 (0.0)	0 (0.0)	1 (25.0)	3 (75.0)	0 (0.0)	1 (25.0)

Note: The figures in parentheses are ratios to the total number of samples.

Age group x Average amount of money to be sent to hometown

8		Total (※)	1. Amount of money to be sent to hometown
Overall		261 (100.0)	4,265 (100.0)
Years of service	1. 10s	5 (1.9)	3,000 (70.3)
	2. 20s	136 (52.1)	4,140 (97.1)
	3. 30s	110 (42.1)	4,366 (102.4)
	4. 40s	6 (2.3)	5,000 (117.2)
	5. 50 years old or older	0 (0.0)	N.A (0.0)
	6. Non-response	4 (1.5)	5,875 (137.7)

※ The number of samples with all the responses of “Whether to send money to home”, “Amount of money to be sent to hometown” and “Frequency of sending money to hometown”

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

Gender x Hometown

		Total	1. Bangkok	2. Central	3. Eastern	4. Northeastern	5. Southern	6. Northern	7. Non-response
Overall		261 ( 100.0)	1 ( 100.0)	5 ( 100.0)	62 ( 100.0)	146 ( 100.0)	1 ( 100.0)	32 ( 100.0)	14 ( 100.0)
Gender	1. Males	58 ( 22.2)	1 ( 100.0)	3 ( 60.0)	15 ( 24.2)	28 ( 19.2)	0 ( 0.0)	8 ( 25.0)	3 ( 21.4)
	2. Females	201 ( 77.0)	0 ( 0.0)	2 ( 40.0)	47 ( 75.8)	116 ( 79.5)	1 ( 100.0)	24 ( 75.0)	11 ( 78.6)
	3. Third gender	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)
	4. Non-response	2 ( 0.8)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	2 ( 1.4)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)

Note: The figures in parentheses are ratios to the total number of samples.

Gender x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		261 ( 100.0)	86 ( 100.0)	64 ( 100.0)	62 ( 100.0)	49 ( 100.0)
Gender	1. Males	58 ( 22.2)	18 ( 20.9)	9 ( 14.1)	17 ( 27.4)	14 ( 28.6)
	2. Females	201 ( 77.0)	67 ( 77.9)	55 ( 85.9)	44 ( 71.0)	35 ( 71.4)
	3. Third gender	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)
	4. Non-response	2 ( 0.8)	1 ( 1.2)	0 ( 0.0)	1 ( 1.6)	0 ( 0.0)

Note: The figures in parentheses are ratios to the total number of samples.

Gender x Wish to return to hometown

		Total	1. Wish to work in hometown very much	2. Wish to work in hometown	3. Wish to work in hometown, if anything	4. Either	5. Wish to stay at the present company, if anything	6. Wish to stay at the present company	7. Wish to stay at the present company very much	8. Invalid responses	9. Non-response
Overall		261 ( 100.0)	69 ( 100.0)	33 ( 100.0)	41 ( 100.0)	48 ( 100.0)	9 ( 100.0)	31 ( 100.0)	12 ( 100.0)	4 ( 100.0)	14 ( 100.0)
Gender	1. Males	58 ( 22.2)	15 ( 21.7)	10 ( 30.3)	13 ( 31.7)	6 ( 12.5)	2 ( 22.2)	5 ( 16.1)	3 ( 25.0)	1 ( 25.0)	3 ( 21.4)
	2. Females	201 ( 77.0)	53 ( 76.8)	23 ( 69.7)	28 ( 68.3)	42 ( 87.5)	7 ( 77.8)	26 ( 83.9)	8 ( 66.7)	3 ( 75.0)	11 ( 78.6)
	3. Third gender	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)
	4. Non-response	2 ( 0.8)	1 ( 1.4)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	0 ( 0.0)	1 ( 8.3)	0 ( 0.0)	0 ( 0.0)

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

### By region (Central)

#### Hometown x Intension to return to hometown

9		Total	Wish to work in hometown	Either	Wish to stay at the present company	Invalid responses	Non-response
Overall		280 (100.0)	153 (54.6)	36 (12.9)	85 (30.4)	0 (0.0)	6 (2.1)
Hometown	1. Bangkok	8 (100.0)	2 (25.0)	1 (12.5)	5 (62.5)	0 (0.0)	0 (0.0)
	2. Central	91 (100.0)	41 (45.1)	12 (13.2)	35 (38.5)	0 (0.0)	3 (3.3)
	3. Eastern	7 (100.0)	4 (57.1)	1 (14.3)	2 (28.6)	0 (0.0)	0 (0.0)
	4. Northeastern	85 (100.0)	48 (56.5)	15 (17.6)	22 (25.9)	0 (0.0)	0 (0.0)
	5. Southern	4 (100.0)	1 (25.0)	1 (25.0)	2 (50.0)	0 (0.0)	0 (0.0)
	6. Northern	57 (100.0)	41 (71.9)	4 (7.0)	12 (21.1)	0 (0.0)	0 (0.0)
	7. Non-response	28 (100.0)	16 (57.1)	2 (7.1)	7 (25.0)	0 (0.0)	3 (10.7)

Note: The figures in parentheses are ratios to the total number of samples.

#### Hometown x Amount of money to be sent to hometown (monthly average)

1		Total (※)	1. Amount of money to be sent to hometown (B)
Overall		168 (100.0)	3,930 (100.0)
Hometown	1. Bangkok	6 (3.6)	5,167 (131.5)
	2. Central	50 (29.8)	3,835 (97.6)
	3. Eastern	6 (3.6)	3,778 (96.1)
	4. Northeastern	55 (32.7)	4,070 (103.5)
	5. Southern	1 (0.6)	9,000 (229.0)
	6. Northern	36 (21.4)	3,750 (95.4)
	7. Non-response	14 (8.3)	3,360 (85.5)

※ The number of samples with all the responses of “Whether to send money to home”, “Amount of money to be sent to hometown” and “Frequency of sending money to hometown”

Note: The figures in parentheses are ratios to the total number of samples.

#### Hometown x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		280 (100.0)	78 (27.9)	89 (31.8)	69 (24.6)	44 (15.7)
Hometown	1. Bangkok	8 (100.0)	3 (37.5)	3 (37.5)	1 (12.5)	1 (12.5)
	2. Central	91 (100.0)	26 (28.6)	19 (20.9)	32 (35.2)	14 (15.4)
	3. Eastern	7 (100.0)	3 (42.9)	0 (0.0)	1 (14.3)	3 (42.9)
	4. Northeastern	85 (100.0)	26 (30.6)	29 (34.1)	21 (24.7)	9 (10.6)
	5. Southern	4 (100.0)	0 (0.0)	2 (50.0)	2 (50.0)	0 (0.0)
	6. Northern	57 (100.0)	13 (22.8)	28 (49.1)	8 (14.0)	8 (14.0)
	7. Non-response	28 (100.0)	7 (25.0)	8 (28.6)	4 (14.3)	9 (32.1)

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

Years of service x Wish to change the job

		Total	1.Wish to change the job			2. Neither			3.Do not wish to change the job			4. Invalid responses	5. Non-response
Overall		280 (100.0)	114 (40.0)	47 (16.8)	171 (61.2)	52 (18.6)	114 (40.9)	47 (16.9)	171 (61.2)	0 (0.0)	0 (0.0)		
Years of service	1. Within 6 months	38 (100.0)	18 (47.4)	47 (123.7)	171 (451.3)	11 (28.9)	9 (23.7)	47 (123.7)	171 (451.3)	0 (0.0)	0 (0.0)		
	2. From 6 months to 1 year	15 (100.0)	5 (33.3)	47 (313.3)	171 (1133.3)	4 (26.7)	6 (40.0)	47 (313.3)	171 (1133.3)	0 (0.0)	0 (0.0)		
	3. From 1 to 2 years	24 (100.0)	12 (50.0)	47 (191.7)	171 (686.7)	3 (12.5)	9 (37.5)	47 (191.7)	171 (686.7)	0 (0.0)	0 (0.0)		
	4. From 2 to 3 years	36 (100.0)	12 (33.3)	47 (130.6)	171 (475.0)	8 (22.2)	16 (44.4)	47 (130.6)	171 (475.0)	0 (0.0)	0 (0.0)		
	5. From 3 to 4 years	64 (100.0)	29 (45.3)	47 (73.4)	171 (267.1)	13 (20.3)	22 (34.4)	47 (73.4)	171 (267.1)	0 (0.0)	0 (0.0)		
	6. 5 years or longer	102 (100.0)	38 (37.3)	47 (46.1)	171 (167.2)	13 (12.7)	57 (54.9)	47 (46.1)	171 (167.2)	0 (0.0)	0 (0.0)		
	7. Non-response	1 (100.0)	0 (0.0)	47 (47.0)	171 (171.0)	0 (0.0)	1 (1.0)	47 (47.0)	171 (171.0)	0 (0.0)	0 (0.0)		

Note: The figures in parentheses are ratios to the total number of samples.

Years of service x Bonus

		Total	1. Bonus
Overall		280 (100.0)	9,656 (100.0)
Years of service	1. Within 6 months	38 (13.6)	4,111 (42.6)
	2. From 6 months to 1 year	15 (5.4)	6,133 (63.5)
	3. From 1 to 2 years	24 (8.6)	7,146 (74.0)
	4. From 2 to 3 years	36 (12.9)	7,729 (80.0)
	5. From 3 to 4 years	64 (22.9)	10,183 (105.5)
	6. 5 years or longer	102 (36.4)	12,110 (125.4)
	7. Non-response	1 (0.4)	13,000 (134.6)

Years of service x Income

		Total	1. Monthly salary	2. Bonus	3. Annual income (※2)
Overall		280 (100.0)	9,383 (100.0)	8,819 (100.0)	120,111 (100.0)
Years of service	1. Within 6 months	38 (13.6)	6,276 (66.9)	1,947 (22.1)	77,263 (64.3)
	2. From 6 months to 1 year	15 (5.4)	7,233 (77.1)	6,133 (69.5)	92,933 (77.4)
	3. From 1 to 2 years	24 (8.6)	9,292 (99.0)	7,146 (81.0)	118,646 (98.8)
	4. From 2 to 3 years	36 (12.9)	8,417 (89.7)	7,514 (85.2)	108,514 (90.3)
	5. From 3 to 4 years	64 (22.9)	10,032 (106.9)	9,855 (111.7)	126,172 (105.0)
	6. 5 years or longer	102 (36.4)	10,856 (115.7)	11,990 (136.0)	140,873 (117.3)
	7. Non-response	1 (0.4)	7,500 (79.9)	13,000 (147.4)	103,000 (85.8)

※1 Data on annual incomes are collected only from respondents giving both monthly salary and bonus. An annual income is calculated by multiplying the monthly salary by 12 and adding bonus.

Note: The figures in parentheses are the numbers of samples or the ratios to the whole annual income.

Years of service x Income

		Total	1. Annual income (※1)
Overall		252 (100.0)	126,143 (100.0)
Years of service	1. Within 6 months	18 (1.6)	91,111 (72.2)
	2. From 6 months to 1 year	15 (2.6)	92,933 (73.7)
	3. From 1 to 2 years	24 (6.2)	118,646 (94.1)
	4. From 2 to 3 years	35 (12.1)	107,500 (85.2)
	5. From 3 to 4 years	60 (25.9)	130,883 (103.8)
	6. 5 years or longer	100 (51.7)	142,916 (113.3)
	7. Non-response	0 (0.0)	0 (0.0)

※1 Data on annual incomes are collected only from respondents giving both monthly salary and bonus. An annual income is calculated by multiplying the monthly salary by 12 and adding bonus.

Note: The figures in parentheses are the numbers of samples or the ratios to the whole annual income.

Age group x Educational background

		Total	1. Junior high school or lower	2. High school	3. Technical high school	4. Technical junior college	5. University	6. Others	7. Invalid responses	8. Non-response
Overall		280 (100.0)	25 (8.9)	95 (33.9)	28 (10.0)	59 (21.1)	68 (24.3)	3 (1.1)	1 (0.4)	1 (0.4)
Years of service	1. 10s	2 (100.0)	0 (0.0)	2 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	2. 20s	133 (100.0)	7 (5.3)	39 (29.3)	12 (9.0)	39 (29.3)	35 (26.3)	0 (0.0)	1 (0.8)	0 (0.0)
	3. 30s	116 (100.0)	15 (12.9)	43 (37.1)	10 (8.6)	17 (14.7)	27 (23.3)	3 (2.6)	0 (0.0)	1 (0.9)
	4. 40s	23 (100.0)	2 (8.7)	9 (39.1)	4 (17.4)	3 (13.0)	5 (21.7)	0 (0.0)	0 (0.0)	0 (0.0)
	5. 50 years old or older	1 (0.0)	1 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	6. Non-response	5 (100.0)	0 (0.0)	2 (40.0)	2 (40.0)	0 (0.0)	1 (20.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

Age group x Average amount of money to be sent to hometown

8		Total (※)	1. Amount of money to be sent to hometown (B)
Overall		280 (100.0)	4,002 (100.0)
Years of service	1. 10s	2 (0.7)	2,500 (62.5)
	2. 20s	133 (47.5)	3,896 (97.4)
	3. 30s	116 (41.4)	4,107 (102.6)
	4. 40s	23 (8.2)	4,237 (105.9)
	5. 50 years old or older	1 (0.4)	N.A (0.0)
	6. Non-response	5 (1.8)	4,000 (100.0)

※ The number of samples with all the responses of “Whether to send money to home”, “Amount of money to be sent to hometown” and “Frequency of sending money to hometown”  
Note: The figures in parentheses are ratios to the total number of samples.

Gender x Hometown

		Total	1. Bangkok	2. Central	3. Eastern	4. Northeastern	5. Southern	6. Northern	7. Non- response
Overall		280 (100.0)	8 (100.0)	91 (100.0)	7 (100.0)	85 (100.0)	4 (100.0)	57 (100.0)	28 (100.0)
Gender	1. Males	97 (34.6)	5 (62.5)	23 (25.3)	4 (57.1)	38 (44.7)	2 (50.0)	18 (31.6)	7 (25.0)
	2. Females	174 (62.1)	3 (37.5)	62 (68.1)	3 (42.9)	46 (54.1)	2 (50.0)	38 (66.7)	20 (71.4)
	3. Third gender	4 (1.4)	0 (0.0)	2 (2.2)	0 (0.0)	1 (1.2)	0 (0.0)	1 (1.8)	0 (0.0)
	4. Non-response	5 (1.8)	0 (0.0)	4 (4.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (3.6)

Note: The figures in parentheses are ratios to the total number of samples.

Gender x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		280 (100.0)	78 (100.0)	89 (100.0)	69 (100.0)	44 (100.0)
Gender	1. Males	97 (34.6)	28 (35.9)	34 (38.2)	22 (31.9)	13 (29.5)
	2. Females	174 (62.1)	48 (61.5)	53 (59.6)	44 (63.8)	29 (65.9)
	3. Third gender	4 (1.4)	1 (1.3)	0 (0.0)	3 (4.3)	0 (0.0)
	4. Non-response	5 (1.8)	1 (1.3)	2 (2.2)	0 (0.0)	2 (4.5)

Note: The figures in parentheses are ratios to the total number of samples.

Gender x Wish to return to hometown

		Total	1. Wish to work in hometown very much	2. Wish to work in hometown	3. Wish to work in hometown, if anything	4. Either	5. Wish to stay at the present company, if anything	6. Wish to stay at the present company	7. Wish to stay at the present company	8. Invalid responses	9. Non-response
Overall		280 (100.0)	8 (100.0)	31 (100.0)	41 (100.0)	36 (100.0)	7 (100.0)	45 (100.0)	33 (100.0)	0 (0.0)	6 (100.0)
Gender	1. Males	97 (34.6)	32 (39.5)	5 (16.1)	11 (26.5)	13 (36.1)	1 (14.3)	19 (42.2)	16 (48.5)	0 (0.0)	0 (0.0)
	2. Females	174 (62.1)	49 (60.5)	26 (83.9)	28 (68.3)	22 (61.1)	4 (57.1)	24 (53.3)	15 (45.5)	0 (0.0)	6 (100.0)
	3. Third gender	4 (1.4)	0 (0.0)	0 (0.0)	1 (1.4)	0 (0.0)	0 (0.0)	2 (4.4)	1 (3.0)	0 (0.0)	0 (0.0)
	4. Non-response	5 (1.8)	0 (0.0)	0 (0.0)	1 (1.4)	1 (2.8)	2 (28.6)	0 (0.0)	1 (3.0)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.



## 2.2 Cross tabulation of the results of questionnaire to factory workers

### By region (Northeastern)

#### Hometown x Intension to return to hometown

9		Total	Wish to work in hometown	Either	Wish to stay at the present company	Invalid responses	Non-response
Overall		137 (100.0)	48 (35.0)	9 (6.6)	28 (20.4)	23 (16.8)	29 (21.2)
Hometown	1. Bangkok	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	2. Central	3 (100.0)	0 (0.0)	0 (0.0)	3 (100.0)	0 (0.0)	0 (0.0)
	3. Eastern	1 (100.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	4. Northeastern	99 (100.0)	36 (36.4)	6 (6.1)	21 (21.2)	22 (22.2)	14 (14.1)
	5. Southern	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	6. Northern	8 (100.0)	2 (25.0)	2 (25.0)	1 (12.5)	1 (12.5)	2 (25.0)
	7. Non-response	26 (100.0)	9 (34.6)	1 (3.8)	3 (11.5)	0 (0.0)	13 (50.0)

Note: The figures in parentheses are ratios to the total number of samples.

#### Hometown x Amount of money to be sent to hometown (monthly average)

1		Total (※)	1. Amount of money to be sent to hometown (B)
Overall		81 (100.0)	3,025 (100.0)
Hometown	1. Bangkok	0 (0.0)	0 (0.0)
	2. Central	2 (2.5)	2,500 (82.7)
	3. Eastern	0 (0.0)	0 (0.0)
	4. Northeastern	66 (81.5)	3,144 (103.9)
	5. Southern	0 (0.0)	0 (0.0)
	6. Northern	5 (6.2)	2,450 (81.0)
	7. Non-response	8 (9.9)	2,531 (83.7)

※ The number of samples with all the responses of “Whether to send money to home”, “Amount of money to be sent to hometown” and “Frequency of sending money to hometown”  
Note: The figures in parentheses are ratios to the total number of samples.

#### Hometown x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		137 (100.0)	45 (32.8)	44 (32.1)	14 (10.2)	34 (24.8)
Hometown	1. Bangkok	0 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	2. Central	3 (100.0)	2 (66.7)	1 (33.3)	0 (0.0)	0 (0.0)
	3. Eastern	1 (100.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)
	4. Northeastern	99 (100.0)	32 (32.3)	33 (33.3)	10 (10.1)	24 (24.2)
	5. Southern	0 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	6. Northern	8 (100.0)	2 (25.0)	3 (37.5)	2 (25.0)	1 (12.5)
	7. Non-response	26 (100.0)	9 (34.6)	6 (23.1)	2 (7.7)	9 (34.6)

Note: The figures in parentheses are ratios to the total number of samples.

#### Years of service x Wish to change the job

		Total	1. Wish to change the job	2. Neither	3. Do not wish to change the job	4. Invalid responses	5. Non-response
Overall		137 (100.0)	54 (39.4)	20 (14.6)	47 (34.3)	2 (1.5)	14 (10.2)
Years of service	1. Within 6 months	27 (100.0)	9 (33.3)	6 (22.2)	7 (25.9)	0 (0.0)	5 (18.5)
	2. From 6 months to 1 year	13 (100.0)	5 (38.5)	2 (15.4)	5 (38.5)	1 (7.7)	0 (0.0)
	3. From 1 to 2 years	20 (100.0)	9 (45.0)	4 (20.0)	3 (15.0)	1 (5.0)	3 (15.0)
	4. From 2 to 3 years	15 (100.0)	9 (60.0)	0 (0.0)	5 (33.3)	0 (0.0)	1 (6.7)
	5. From 3 to 4 years	7 (100.0)	6 (85.7)	1 (14.3)	0 (0.0)	0 (0.0)	0 (0.0)
	6. 5 years or longer	55 (100.0)	16 (29.1)	7 (12.7)	27 (49.1)	0 (0.0)	5 (9.1)
	7. Non-response	0 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

Years of service x Bonus

		Total	1. Bonus
Overall		137 (100.0)	8,444 (100.0)
Years of service	1. Within 6 months	27 (19.7)	6,083 (72.0)
	2. From 6 months to 1 year	13 (9.5)	3,667 (43.4)
	3. From 1 to 2 years	20 (14.6)	6,105 (72.3)
	4. From 2 to 3 years	15 (10.9)	8,633 (102.2)
	5. From 3 to 4 years	7 (5.1)	8,000 (94.7)
	6. 5 years or longer	55 (40.1)	10,065 (119.2)
	7. Non-response	0 (0.0)	0 (0.0)

Years of service x Income

		Total	1. Monthly salary	2 Bonus	3 Annual income (※2)
Overall		137 (100.0)	8,422 (100.0)	6,643 (100.0)	106,113 (100.0)
Years of service	1. Within 6 months	27 (19.7)	9,558 (113.5)	1,404 (21.1)	111,796 (105.4)
	2. From 6 months to 1 year	13 (9.5)	8,769 (104.1)	1,692 (25.5)	106,923 (100.8)
	3. From 1 to 2 years	20 (14.6)	7,025 (83.4)	5,800 (87.3)	90,100 (84.9)
	4. From 2 to 3 years	15 (10.9)	8,000 (95.0)	8,633 (130.0)	104,633 (98.6)
	5. From 3 to 4 years	7 (5.1)	6,500 (77.2)	8,000 (120.4)	86,000 (81.0)
	6. 5 years or longer	55 (40.1)	8,676 (103.0)	9,882 (148.8)	111,918 (105.5)
	7. Non-response	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

※1 Data on annual incomes are collected only from respondents giving both monthly salary and bonus. An annual income is calculated by multiplying the monthly salary by 12 and adding bonus.

Note: The figures in parentheses are the numbers of samples or the ratios to the whole annual income.

Years of service x Income

		Total	1. Annual income (※1)
Overall		106 (100.0)	105,561 (100.0)
Years of service	1. Within 6 months	6 (6.2)	116,083 (110.0)
	2. From 6 months to 1 year	6 (4.6)	86,667 (82.1)
	3. From 1 to 2 years	19 (15.5)	91,368 (86.6)
	4. From 2 to 3 years	15 (14.0)	104,633 (99.1)
	5. From 3 to 4 years	7 (5.4)	86,000 (81.5)
	6. 5 years or longer	53 (54.2)	114,443 (108.4)
	7. Non-response	0 (0.0)	0 (0.0)

※1 Data on annual incomes are collected only from respondents giving both monthly salary and bonus. An annual income is calculated by multiplying the monthly salary by 12 and adding bonus.

Note: The figures in parentheses are the numbers of samples or the ratios to the whole annual income.

Age group x Educational background

7		Total	1. Junior high school or	2. High school	3. Technical high school	4. Technical junior college	5. University	6. Others	7. Invalid responses	8. Non-response
Overall		137 (100.0)	20 (14.6)	50 (36.5)	15 (10.9)	25 (18.2)	24 (17.5)	1 (0.7)	0 (0.0)	2 (1.5)
Years of service	1. 10s	2 (100.0)	0 (0.0)	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	2. 20s	69 (100.0)	11 (15.9)	26 (37.7)	9 (13.0)	11 (15.9)	11 (15.9)	0 (0.0)	0 (0.0)	1 (1.4)
	3. 30s	59 (100.0)	8 (13.6)	20 (33.9)	4 (6.8)	14 (23.7)	11 (18.6)	1 (1.7)	0 (0.0)	1 (1.7)
	4. 40s	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
	5. 50 years old or older	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	6. Non-response	6 (100.0)	1 (16.7)	3 (50.0)	1 (16.7)	0 (0.0)	1 (16.7)	0 (0.0)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

Age group x Average amount of money to be sent to hometown

8		Total (※)	1. Amount of money to be sent to hometown (B)
Overall		137 (100.0)	3,163 (100.0)
Years of service	1. 10s	2 (1.5)	0 (0.0)
	2. 20s	69 (50.4)	3,150 (99.6)
	3. 30s	59 (43.1)	3,233 (102.2)
	4. 40s	1 (0.7)	2,500 (79.0)
	5. 50 years old or older	0 (0.0)	N.A (0.0)
	6. Non-response	6 (4.4)	1,500 (47.4)

※ The number of samples with all the responses of "Whether to send money to home", "Amount of money to be sent to hometown" and "Frequency of sending money to hometown"

Note: The figures in parentheses are ratios to the total number of samples.

## 2.2 Cross tabulation of the results of questionnaire to factory workers

Gender x Hometown

		Total	1. Bangkok	2. Central	3. Eastern	4. Northeastern	5. Southern	6. Northern	7. Non-response
Overall		137 (100.0)	0 (0.0)	3 (100.0)	1 (100.0)	99 (100.0)	0 (0.0)	8 (100.0)	26 (100.0)
Gender	1. Males	34 (24.8)	0 (0.0)	2 (66.7)	1 (100.0)	27 (27.3)	0 (0.0)	1 (12.5)	3 (11.5)
	2. Females	99 (72.3)	0 (0.0)	1 (33.3)	0 (0.0)	69 (69.7)	0 (0.0)	7 (87.5)	22 (84.6)
	3. Third gender	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	0 (0.0)	0 (0.0)	1 (3.8)
	4. Non-response	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

Gender x Birth order of brothers and sisters

		Total	1. Firstborns	2. Lastborns	3. Others	4. Non-response
Overall		137 (100.0)	45 (100.0)	44 (100.0)	14 (100.0)	34 (100.0)
Gender	1. Males	34 (24.8)	9 (20.0)	19 (43.2)	2 (14.3)	4 (11.8)
	2. Females	99 (72.3)	35 (77.8)	25 (56.8)	11 (78.6)	28 (82.4)
	3. Third gender	2 (1.5)	1 (2.2)	0 (0.0)	0 (0.0)	1 (2.9)
	4. Non-response	2 (1.5)	0 (0.0)	0 (0.0)	1 (7.1)	1 (2.9)

Note: The figures in parentheses are ratios to the total number of samples.

Gender x Wish to return to hometown

		Total	1. Wish to work in hometown very much	2. Wish to work in hometown	3. Wish to work in hometown, if anything	4. Either	5. Wish to stay at the present company, if anything	6. Wish to stay at the present company	7. Wish to stay at the present company very much	8. Invalid responses	9. Non-response
Overall		137 (100.0)	26 (100.0)	12 (100.0)	10 (100.0)	9 (100.0)	6 (100.0)	16 (100.0)	6 (100.0)	23 (100.0)	29 (100.0)
Gender	1. Males	34 (24.8)	5 (19.2)	1 (8.3)	3 (30.0)	3 (33.3)	1 (16.7)	4 (25.0)	0 (0.0)	16 (69.6)	1 (3.4)
	2. Females	99 (72.3)	20 (76.9)	11 (91.7)	7 (70.0)	6 (66.7)	5 (83.3)	12 (75.0)	4 (66.7)	7 (30.4)	27 (93.1)
	3. Third gender	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (16.7)	0 (0.0)	1 (3.4)
	4. Non-response	2 (1.5)	1 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (16.7)	0 (0.0)	0 (0.0)

Note: The figures in parentheses are ratios to the total number of samples.

**(Reference) Sorting of Factory Workers Surveyed in terms of Province of Origin for Questionnaire**

**Northern Region of Thailand**

Uthaitхани
Uttaradit
Kamphaeng Phet
Sukhothai
Tak
Chiang Mai
Chiang Rai
Nan
Nakhon Sawan
Phayao
Phitsanulok
Phichit
Phrae
Phetchabun
Mae Hong Son
Lampang
Lamphun

**Northeastern Region of Thailand**

Amnat Charoen
Udon Thani
Ubon Ratchathani
Kalasin
Khon Kaen
Sakon Nakhon
Sisaket
Surin
Chaiyaphum
Nakhon Phanom
Nakhon Ratchasima
Nong Khai
Nong Bua Lamphu
Buriram
Maha Sarakham
Mukdahan
Yasothon
Loei
Roi Et
Buengkan

**Central Region of Thailand**

Ang Thong
Ayutthaya
Kanchanaburi
Sa Kaeo
Samut Sakhon
Samut Songhram
Samut Prakan
Saraburi
Singburi
Suphanburi
Chainat
Chachoengsao
Chanthaburi
Chonburi
Trat
Nakhon Nayok
Nakhon Pathom
Nonthaburi
Pathum Thani
Prachinburi
Prachuap Khiri Khan
Phetchaburi
Ratchaburi
Rayong
Lopburi

**Southern Region of Thailand**

Krabi
Satun
Surat Thani
Songkhla
Chumphon
Trang
Nakhon Si Thammarat
Narathiwat
Pattani
Phatthalung
Phang Nga
Phuket
Yala
Ranong

## Request for Response to Questionnaire survey

- Survey conducted by the Japan International Cooperation Agency (JICA) -

This questionnaire survey takes around 10-12 minutes to complete and is intended to find out the situation of economic development and labor mobility in Thailand.

No information that could identify individuals is asked. Please cooperate.

### 1. Let us know about you.

1-1 What are your gender and age? (Select one option only.)

① Male

② Female

Years of age

1-2 Are you married? (Select Option ① if you are in common law marriage)  
(Select one option only.)

① Married

② Unmarried

1-3 How many brothers and sisters do you have, including you? What is your birth order?  
(Select one option only.)

① Only child

② Two brothers or sisters

③ Three brothers or sisters

④ Four brothers or sisters

⑤ Five or more brothers and sisters

-th child

1-4 What is the major income source of your family home? (Select one option only.)

① Full-time farmer

② Part-time farmer

③ Others

1-5 Select one of schools or educational institutions from you finally graduated from.  
(Select one option only.)

① Junior high school

② High school

③ Technical high school

④ Technical junior college

⑤ University

⑥ School or educational institution other than those listed above.

1-6 What do you want the most other than money? (Select one option only.)

## 2. Let us know about your working status.

2-1 Let us know your employment history (from the most recent one) in the previous 5 years or so, except the present one)

Job type (Select one option only.)	Years of service		Region
① Factory worker ② Helping family business ③ Others	Year(s)	Month(s)	① Northern ② Northeastern ③ Central ④ Southern
① Factory worker ② Helping family business ③ Others	Year(s)	Month(s)	① Northern ② Northeastern ③ Central ④ Southern
① Factory worker ② Helping family business ③ Others	Year(s)	Month(s)	① Northern ② Northeastern ③ Central ④ Southern
① Factory worker ② Helping family business ③ Others	Year(s)	Month(s)	① Northern ② Northeastern ③ Central ④ Southern

2-2 How long have you worked for the present company? (Select one option only.)

- ① For 6 months or less    ② For six month ~ 1 year    ③ For 1~2 years  
 ④ For 2~3 years    ⑤ For 3~4 years    ⑥ For 5 years or longer

2-3 How did you find the present company? (Select one option only.)

- ① On my own (checking job ads)    ② Introduction by acquaintance, family member or relative    ③ Through staff agency  
 ④ Recommendation of school    ⑤ Others

2-4 What is your main assignment? (Select one option only.)

- ① General work in production line    ② Line supervision    ③ Administrative work  
 ④ Mechanical repair and computer operation other than those cited in Option ①    ⑤ Others

2-5 How many days of the week do you work for the company? (Select one option only.)

- ① 4 days or less    ② 5 days    ③ 6 days    ④ Irregular

2-6 How much salary do you receive from the company? Let us know the net income if the company deducts the accommodation fee, taxes, insurances, union membership fees and other expenses from your income. (Select one option only.)

- |                   |                    |                   |
|-------------------|--------------------|-------------------|
| ① ~4,999B         | ② 5,000B~5,999B    | ③ 6,000B~6,999B   |
| ④ 7,000B~7,999B   | ⑤ 8,000B~8,999B    | ⑥ 9,000B~9,999B   |
| ⑦ 10,000B~10,999B | ⑧ 11, 000B~11,999B | ⑨ 12,000B or more |

2-7 How much bonus do you receive from the company per year? (Select one option only.)

- |                  |                   |                 |
|------------------|-------------------|-----------------|
| ① ~4,999B        | ② 5,000B~6,999B   | ③ 7,000B~8,999B |
| ④ 9,000B~10,999B | ⑤ 11,000B~12,999B | ⑥ 13,000B~      |

### 3. Let us know about the working environment.

3-1 Do you wish to change the job? (Select one option only.)

- |                               |                  |                             |           |
|-------------------------------|------------------|-----------------------------|-----------|
| ① Absolutely wish to          | ② Wish to        | ③ Wish to, if anything      | ④ Neither |
| ⑤ Do not wish to, if anything | ⑥ Do not wish to | ⑦ Absolutely do not wish to |           |

3-2 This question is for respondents who selected either ① Absolutely wish to, ② Wish to, or ③ Wish to, if anything.

Why do you wish to change the job? (Select up to 3 options.)

- |   |   |   |
|---|---|---|
| ① Wish to increase income                                 | ② Wish to change the job category   | ③ With to have more time for myself                             |
| ④ Wish to work for a company with a better welfare scheme | ⑤ Wish to work for a company with better facilities and building services | ⑥ Wish to work for a company with better personal relationships |
| ⑦ Wish to go to an urban area                             | ⑧ Wish to return to my hometown   | ⑨ Wish to go to the hometown of my partner (spouse)             |
| ⑩ Wish to live somewhere else                             | ⑪ Others  |   |

3-3 This question is for respondents who selected either ⑤ Do not wish to, if anything, ⑥ Do not wish to, or ⑦ Absolutely do not wish to. Why do you not wish to change the job? (Select up to 3 options.)

- |   |   |                                      |
|---|---|--------------------------------------|
| ① High salary                                       | ② Easy to work (easy to make a balance between private and working lives) | ③ Good personal relationships        |
| ④ The present company values my ability and skills. | ⑤ The present company enables me to improve my ability and skills.        | ⑥ I do not bother to find a new job. |
| ⑦ I am worried if I can find a new job.             | ⑧ I do not wish to leave the present location.                            | ⑨ Others                             |

## 4. Let us know about your relation with your hometown.

4-1 What is your hometown?

	Country		Province		District		Sub-district
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4-2 How many times do you return to your hometown? (Select one option only.)

- ① Do not return to hometown at all    ② Once or twice a year    ③ 3-4 times a year    ④ 5-6 times a year    ⑤ 7 times or more a year

4-3 Do you send money to your family? (Select one option only.)

- ① Yes    ② No

→ 4-4 This question is for respondents who selected Option ① “Yes.”

How often do you send money to your family? (Select one option only.)

- ① Once a week    ② Once a fortnight    ③ Once a month  
 ④ Once every two months    ⑤ Once every three months    ⑥ Once every four months  
 ⑦ Irregularly

→ 4-5 This question is for respondents who selected Option (1) “Yes.”

How much do you send money on average per go? (Select one option only.)

- ① ~999B    ② 1,000B~1,999B    ③ 2,000B~2,999B  
 ④ 3,000B~3,999B    ⑤ 4,000B~4,999B    ⑥ 5,000B~5,999B  
 ⑦ 6,000B~6,999B    ⑧ 7, 000B~7,999B    ⑨ 8, 000B~8,999B  
 ⑩ 9,000B~

→ 4-6 This question is for respondents who selected Option (1) “Yes.”

Have you changed the amount of money to send in the previous one year or so? (Select one option only.)

- ① The amount fell very much.    ② The amount fell.    ③ The amount slightly fell.  
 ④ The amount remains the same.    ⑤ The amount slightly increased.    ⑥ The amount increased.  
 ⑦ The amount increased very much.

4-7 If there is a company similar to your present company in your hometown, do you wish to work for it even if your salary slightly falls? (Select one option only.)

- ① Wish to work in my hometown very much    ② Wish to work in my hometown.    ③ Wish to work in my hometown, if anything.  
 ④ Either will do.    ⑤ Wish to stay at the present company, if anything    ⑥ Wish to stay at the present company.  
 ⑦ Wish to stay at the present company very much.

Thank you for your cooperation.



