

**INDUSTRIAL SECTOR DEVELOPMENT  
IN THE KINGDOM OF THAILAND:  
A STUDY**

**MOLD & DIE AND TOY INDUSTRIES**

**FIRST YEAR FINAL REPORT**

**SEPTEMBER 1988**

**JAPAN INTERNATIONAL COOPERATION AGENCY**



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## PREFACE

In response to the request of the Government of the Kingdom of Thailand, the Government of Japan has decided to conduct a study on industrial sector development in the Kingdom of Thailand, and entrusted the study to the Japan International Cooperation Agency (JICA). JICA has sent to Thailand a study team headed by Mr. Akira Inoue, Japan External Trade Organization from January 31 to March 30, and from June 1 to June 15, 1988.

The team had discussions on the study with the officials concerned of the Government of Thailand and conducted field surveys in the study-related areas. After the team returned to Japan, further studies were made and the present report has been prepared.

I hope that this report will serve for the development of the industrial sector in Thailand and contribute to the promotion of friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of the Government of the Kingdom of Thailand for their close cooperation extended to the team.

September 1988



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Kensuke Yanagiya

President

Japan International Cooperation Agency



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## Introduction

This is the Final Report of the "Study on Industrial Sector Development in the Kingdom of Thailand (First Year)".

The Study is based on the Scope of Work signed in August 1987 by the Department of Industrial Promotion (DIP), Ministry of Industry of the Kingdom of Thailand, and Japan International Cooperation Agency (JICA).

JICA commissioned Japan External Trade Organization (JETRO) and NKK Corporation to organize a Study Team, and the study was conducted from January to March of 1988. The first year of study focused on two subsectors and two products each in both sectors, namely the mold and die industry (molds and dies for plastic/molds and dies for presses) and toy industry (plastic and metal toys/stuffed toys).

The field survey was carried out from January 31 to March 30 1988 and the supplementary field survey from June 1 to 15. During these surveys, the Progress Report was submitted to the Thai government on March 28. Meanwhile, the studies on the other countries were conducted through JETRO overseas offices.

The Report consists of five parts, namely; I. Industrialization, II. Mold & die industry, III. Toy industry, IV. Comprehensive program, and Appendix. Parts I to III consist of the fact findings including other countries and the extraction of problems. Part IV contains examinations and recommendations for a comprehensive program.

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## **Background, Objects, and Method of Study**

### **1. Background and Perspective**

After the first oil crisis, the world economy entered a period of low growth. Among the developing countries, the Asian NIEs and the ASEAN nations managed to achieve economic growth rates higher than the world average. The Asian NIEs increased their exports of industrial manufactures, while the ASEAN nations increased exports of crude oil and primary products. Each thus displayed remarkable performance. However, with the advent of the 1980s, the ASEAN nations were confronted with severe economic conditions due to the plummeting price of primary products and crude oil and the resultant fall in foreign currency earnings and rising debts.

During this time, Japan enjoyed a reduction in the value of its imports due to the fall in fuel prices and an increase in its exports due to its strong international competitiveness. In 1986, it recorded a giant surplus on its current account balance of US\$86 billion. This caused severe trade friction with the western countries. As a result, Japan was pressed with strong demands to change its industrial structure to one more harmonized with the international economy.

The ASEAN nations found themselves in severe straits due to the changes in the international environment in the 1980s and made up their minds to promote their export industries as fast as possible so as to contribute to foreign currency earnings. With this in mind, they have been promoting local industry and positively encouraging foreign investment in the same.

On the other hand, Japanese companies and other foreign firms have been speeding up their direct investment in the developing countries so as to deal with the changes in their domestic industrial structures and the reorganization of the international division of labor. They have been transferring their capital, technology, and know-how to the ASEAN nations and thus contributing to industrial development there. These situations in particular have been pressing Japan to play a greater role in this.

Since the 1970s, a horizontal division of labor has spread among Japan, the U.S., and the Asian NIEs, leading to a steady expansion of the trade in manufactured goods. Once the ASEAN nations join in full measure, there will be a horizontal international division of labor established in the entire Asia Pacific region. This will represent the biggest structural change in the world economy in this century. That is, it will be a structural change in the next center of development of the global economy - the Asia Pacific region.

In Thailand, one of the ASEAN nations, the focus of the economy is shifting from agriculture to manufacturing. Since 1984, the manufacturing industries have taken over first place in share of the GDP (gross domestic product) from agriculture, forestry, and fisheries. This shows the changes in the economic structure wrought by the industrialization program in effect since the 1960s.

Thailand began its industrialization with the establishment of the Industrial Promotion Act in 1954. In the beginning, this centered on state-run enterprises, but since 1960, it has been powered by private enterprise and foreign investment.

In the beginning, also, the industrialization started with import substitution, primarily in the light industries, but it was gradually spread to other fields as well. Starting in the early 1970s, the country began in parallel to work for export-oriented industrialization, but this proved to be insufficiently effective.

Since 1977, export-oriented industrialization has been promoted through an emphasis on fostering agro-based industries and expansion of foreign investment. In 1983, further supplementary measures were taken, with export ratios being clearly specified for export promotion projects, controls relaxed on foreign equity participation, etc. Recent Thai economic policies focus both on greater economic efficiency and expansion of exports.

In the current sixth 5-year plan (1986 to 1991), 10 programs have been established, with corresponding targets to be achieved. One of these, the "Production, Marketing and Employment Development Program", calls for increase of export revenues through diversification of agricultural products, promotion of agro-industries, and promotion of export industries.

Government efforts to promote exports have led to relatively steady growth of Thai exports. However, the economic growth continues to be led by domestic demand, so imports are continuing to increase and the trade balance remains in the red.

Since 1985, signs of a change have begun to appear in the exports of Thailand. In 1986, while the exports of the other ASEAN nations stagnated, Thailand increased its exports by 19.6 percent compared with the previous year - a good showing. In 1987 too, it is expected to increase exports by over 20 percent. In particular, there was striking growth in such traditional products as rice, tapioca, rubber and also textile products (first place in 1987), ICs (sixth place), canned marine produce (seventh place), fabrics (eighth place), and other industrial manufactures.

This growth in exports of manufactured goods has been covering for the fall in export value due to the drop in prices of primary products since 1980 and helping Thailand reduce its trade deficit. However, in 1987, an increase in imports of machinery and raw materials for use by new investments there has increased the trade deficit.

Starting from the second half of 1986, along with the appreciation of the yen and the hike in the value of the currencies of the Asian NIEs with respect to the U.S. dollar, there was an increasing trend among corporations in Japan and the NIEs to look for production bases in the ASEAN countries for labor intensive export products and the like. In particular, Thailand offers political stability, promotional privileges for export-oriented investment, relatively inexpensive labor costs, and other NIEs inducements, resulting in soaring direct investment by Japan, Taiwan, and other countries. Once these newly established companies start to operate in the future, we may expect considerable growth in exports of industrial manufactures.

Japan's Ministry of International Trade and Industry has propounded a program for positive assistance of other governments and companies in the Asian nations in four fields since the fall of 1986.

- (1) Improvement of infrastructure for export-type industries
- (2) Overall technological cooperation in nurturing strategic export industries (cooperation in fostering talent and marketing)
- (3) Investment, etc., for nurturing strategic export industries
- (4) Improvement in the tax systems, investment policies, etc., of the developing countries.

Japan has been cooperating in the past in various ways for the industrial development of the developing countries, but the current project aims for the preparation and proposal of a comprehensive program for the promotion of foreign currency generating industries in the Asian nations.

That is, it aims at going beyond the identification of possible export industries and intends to formulate and present a package for a means of policy and cooperation in all related fields.

In this study, we have assumed an emphasis on the market principle. The study does not stop at saying certain industries should be able to export, but performs a positive analysis to clarify the specific possibilities for production and export.

Another assumption is an international perspective. In the 1980s, reflecting the evolution of the advanced nations to high-tech industries, there have been rapid changes in the structure of relative superiority in international trade. This has been causing changes in the structure of the international division of labor as well. The current project attempts to consider this and analyze the possibilities of export in the framework of international trade.

The Thai government, in particular the Ministry of Industry, requested cooperation from the Japanese government after this proposal was made. JICA dispatched a contact

mission in September 1986. Upon the agreement on the framework of technical cooperation, 2 short-term-experts were dispatched for 6 months beginning from February 1987. They prepared for the coming survey. The JICA sent a Scope of Work survey mission to Thailand in August 1987 to deliberate with the Thai government on the industries and products to be surveyed. The industries and products decided on as a result are given below:

### Industries and Products to be Surveyed

	Industry	Product
1st year	Engineering Industry	Mold and dies (for plastics) Mold and dies (for presses)
	Toys	Plastic toys, metal toys, Stuffed toys
2nd year	Garment and Textiles*	
	Ceramics	Tableware and novelties
3rd year	Furniture	Wood furniture
	Undetermined industry	

Note: Industries and products from the second year on may be changed.

\*Focus will be on dyeing and finishing processes.

## 2. Objectives and Contents

The main survey of the first year is meant to survey the mold and die and toy industries and formulate a comprehensive program for their development and for export promotion.

In the formulation of the program, attention has been given to:

[1] Selection of the most suitable and practical plans through comparison and consideration of various alternatives,

[2] Presentation of as much detail as possible on the program objectives, content, costs, schedule, effects, inhibiting factors, etc.

[3] Presentation of the program divided into short-term and medium and long-term parts.

The specific items surveyed by the study have been set as the following based on the S/W (concluded August 18, 1987):

- (1) Summary of Selected Industries
  - a) Current state of production items, production, trade, and companies
  - b) Investment, technical tieups, financing, tax system, promotion of foreign investment
- (2) Current State of Selected Industries and Manufacturing Factories
  - a) Manufacturing processes and specifications
  - b) Technical level (quality control, etc.)
  - c) Product development (designs, etc.)
  - d) Corporate management (business management, capital procurement, etc.)
  - e) Sales strategies (market surveys, marketing, etc.)
  - f) Relation with peripheral industries (raw materials, equipment, etc.)
- (3) Survey on Export Markets By Product
  - a) Survey of supply and demand and state of imports in main importing countries
  - b) Marketability of products in main importing countries
- (4) Preparation of Comprehensive Program for Development of Selected Industries and Export Promotion
  - a) Institutions and policies
  - b) Improvement of technology
  - c) Product development
  - d) Sales strategies
  - e) Business management
  - f) Human resource development
  - g) Improvement of infrastructure of industry
- (5) Discovery of Japanese Companies Desiring Joint Ventures and Technical Tieups in Thailand
  - a) Survey of companies for ventures or technical tieups
  - b) Preparation of list of companies for ventures or technical tieups

The main contents of the study have been set as the following.

(1) Engineering Industry

[1] Grasp of current state of the selected industry

Grasp the current state of the mold & die industry from key indicators and clarify the state of imports in major markets and the development gap with competing countries to provide indicators for making future promotion plans.

[2] Field survey of various systems and infrastructure for promoting said industry

Dig into current industrial promotion policies and problems in the same, the state of preparation of the infrastructure supporting the industry, and the needs of the companies (local, Japanese-affiliated, Japanese companies desiring to invest), and other topics to provide indicators for proposing improvements and making a schedule for implementation of same. As the method, use questionnaires and interviews.

[3] Grasp of specific problems in the selected industry

Select 10 to 20 representative companies from the industry and, based on field survey, uncover problems in each stage from production to sales.

[4] Survey of export markets by product

Dig into division of labor/competition/evaluation and problems from the import demand side and tie in with points for improvement.

[5] Promotion of investment and technical tieups in said industry and ancillary industries

Uncover potential investors and their partners.

[6] Preparation of a comprehensive program for promotion of said industry

Organize the specific problems found above, give priorities to and make a scheduling for the same, and propose industrial promotion policy on the basis of the above. For example, tax and financial measures for fostering industry and promoting, investment promotion activities for foreign corporations, and support measures for product development.



(2) Toy Industry

[1] Grasp of current state of the selected industry

Grasp the current state of toy industry from key indicators and clarify the state of imports in major markets and the development gap with competing countries to provide indicators for making future promotion plans.

[2] Field survey of various systems and infrastructure for promoting said industry

Dig into current industrial promotion policies and problems in the same, the state of preparation of the infrastructure supporting the industry, and the needs of the companies (Thai, Japanese-affiliated, and Japanese companies desiring to invest), and other topics to provide indicators for proposing improvements and making a schedule for implementation of the same. As the method, use questionnaires and interviews.

[3] Grasp of specific problems in the selected industry

Select 10 to 20 representative companies from the industry and, based on field survey, clarify problems in each stage from production to sales. Also, list priorities in improvement measures.

[4] Survey of export markets by product

Dig into division of labor/competition/evaluation and problems from the import demand side and tie in with points for improvement. Also, perform export marketing.

[5] Promotion of investment and technical tieups in said industry and ancillary industries

Uncover potential investors and partners.

[6] Preparation of a comprehensive program for promotion of said industry

Organize specific problems obtained above, give priorities to and make scheduling for the same, and propose industrial promotion policy on the basis of the above. For example, tax and financial measures for fostering industry and promoting exports, investment promotion activities for foreign corporations, support measures for product development, and export marketing activities for overseas sales promotion. (surveys, exhibitions, dispatch of missions, etc.)

### 3. Methodology

The methodology of the study is as follows:

- (1) Advance Preparations in Japan
  - a) Collection and analysis of existing materials and statistics in Japan
  - b) Preparation of detailed plan for field surveys and work in Japan
  - c) Preparation of inception report and schedule of survey
  - d) Preparation of question forms
- (2) Field Surveys
  - a) Explanation of inception report and discussions on survey plans
  - b) Collection of information through interviews with related organizations and deliberations on same
  - c) Survey of related companies and factories and on-site surveys
  - d) Questionnaire survey on related companies and factories
- (3) Surveys of Third Country
  - a) Survey of third country markets
  - b) Survey of industries of competing countries
  - c) Survey of past examples of industrial policies and export promotion policies

Above performed by survey with written materials and surveys commissioned through JETRO overseas offices.

- (4) Domestic Survey
  - a) Summary and analysis of results of field surveys
  - b) Summary and analysis of results of surveys of third country
  - c) Collection and analysis of interviews with related companies in Japan, on-site surveys, and questionnaire surveys
  - d) Grasp and deliberation of specific problems
  - e) Preparation of comprehensive program

Of the above, (d) and (e) performed through discussions with supporting members and experts.

The specific content of the study was as follows:

(1) Interview & Factory Survey in Thailand

	Local Survey (Feb.-Mar. 1988)	Supplemental Local Survey (June 1988)	Main Counterparts
System/Policy	34	8	Governmental organization, the industrial association, banks, etc.
Mold & Die Industry	54	12	Factories of mold & die related industries, users, schools
Toy Industry	35	12	Toy factories, distribution related industries, designing and inspectional organizations, etc.

(2) Survey by Questionnaire in Thailand (Feb.-Mar. 1988)

Mold & Die Industry	ca 50 questionnaires by phone
Toy Industry	64 copies were sent; 23 answers received

(3) Survey by Questionnaire in Japan (Mar.-May 1988)

	Companies Inquired	Companies Answered	Rate of Collection
Mold & Die Industry	671	92	13.7%
Toy Industry	167	36	21.6%

(4) Survey of the 3rd Countries (Jan.-June 1988)

Surveys on the following countries were entrusted to research institutes via JETRO oversea offices. Others were implemented by documentary survey.

Mold & Die Industry		
Industry Survey of Competitive Country/Area		ROK, Hong Kong, Singapore
Toy Industry		
Market Survey		U.S.A., F.R.G.
Industry Survey of Competitive Country/Area		ROK, China

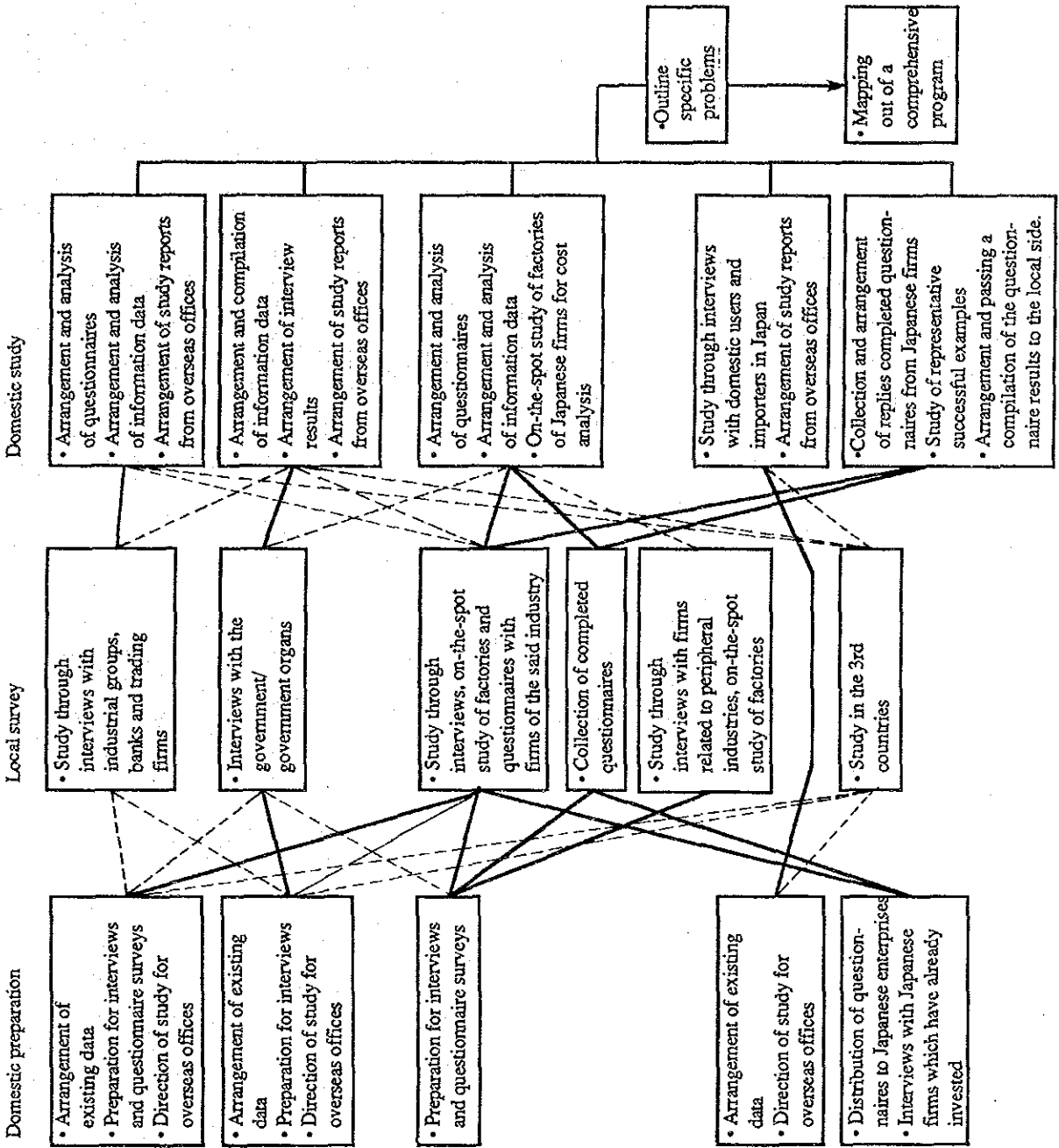
**(5) Others**

Other than the above-mentioned, documentary survey, statistical analysis, and discussion among study team members and scholars in Japan were useful in the comprehensive program.

# WORK CHART

1. Gain a grasp of the current state of selected industries
  - Actual situation of the selected industry
  - Supply-demand and import situation in importing countries
  - Situation of the industry and exports of competing countries
2. Field survey of system for promoting the industries under study
  - Measures for the promotion of the industry
  - Problems with their application to the said industry
  - Comparison with competing countries
3. Gain a grasp of specific problems in the selected industries
4. Export market survey by product
  - Situation of the division of labor, competition with major nations
  - Appraisal of imported products and problems in major importing nations
  - Marketing activities in major importing nations
5. Promotion of investment and technological tie-ups

Examples: ——— Main business  
 - - - - - Incidental business





## **I. CURRENT STATE OF INDUSTRIALIZATION POLICY**





## I. CURRENT STATE OF INDUSTRIALIZATION POLICY

### 1. Progress and Current State of Industrialization

#### 1-1. Progress of Industrialization

Thailand's industrialization is considered to have begun with the establishment of "Act on Promotion of Industries 1954", but only became full scale with the start of the First 6-Year Economic Development Plan, established in line with an economic diagnosis and recommendations by a World Bank mission in 1959.

Before that time, Thailand imported all sorts of manufactured goods, including textile products, from Western Europe, particularly the United Kingdom. It could not develop any modern industry since it could not compete in terms of prices and quality and thus only had some state-run enterprises and small cottage industries.

Today, more than 20 years after the start of full-scale industrialization, the added value produced by the manufacturing sector accounts for about 20% of the gross domestic product (GDP). Since 1984, it has surpassed even agriculture. Up until the early 1950s, there were only some 2000 factories (registered factories), but this rose to 16,000 in 1960, 50,000 in 1970, and 85,000 in 1986.

The process of industrialization in Thailand during this 40 year period, seen in relation to the economic development plans, from the viewpoint of changes in industrialization policies can be summarized as follows:

- 1945-60: Period from the end of World War II to 1960, when a policy of industrialization led by the government based on the State Enterprise Establishment Act (1953) and the Industrial Promotion Act (1954) was adopted.
- 1961-71: Period through the 1960s, corresponding to the first and second economic plans which were drafted along the basic guidelines for industrialization by the private sector and industrialization by introduction of foreign investment which was more recommended by the World Bank in 1959. Under the "Promotion of Industrial Investment Act 1960" and its revision, the "Industrial Investment Promotion Act 1962", an active policy to introduce foreign investment was taken. As a result, industrialization of consumer goods through import substitution has developed favorably.

- 1972-76: Period of the third development plan, during which there was an increase in imports of capital goods, intermediate goods, and raw materials due to the import substitution industrialization and a resultant deterioration in the trade balance. Together with the end of the Vietnam war demand (1975), the global recession due to the oil crises, and other external factors, it became necessary to switch to industrialization which would promote exports. The "Industrial Investment Promotion Act 1962" was revamped in October 1972 to be the "Investment Promotion Act 1972".
- 1977-81: Period of fourth development plan, during which the government regarded the introduction of foreign capital as an important policy and continued to promote the export industries through the enforcement of the "Investment Promotion Act 1977." And further it decided to correct the overconcentration of income in the central region caused by the previous industrialization policy and decided to improve the industrial production structure, disperse industry to the regional areas and establish the required infrastructure for the same.
- 1982-86: Period of fifth development plan, during which there was a certain amount of progress seen in overall economic and social development, but the economic growth rate declined, employment was sluggish, the external balance deteriorated, fiscal deficits increased, the gap among regions increased, and other problems surfaced, thus requiring a reevaluation of industrialization policies.

#### (1) Industrialization Based on State-Run Enterprises (From End of World War II to 1960)

The main reason why Thailand chose the course of industrialization through state-run enterprises was that rapid industrialization through private sector capital would have in the end worked to the benefit of foreign capital and overseas Chinese capital rather than the relatively weak Thai capital.

After the end of the Second World War, Thailand recommenced exports of rice. With the Korean war and the subsequent boom in primary products, it enjoyed steady

growth in exports of products other than rice, such as rubber and tin, which helped support the postwar recovery of the Thai economy. However, after the boom brought about by the Korean war passed, the prices of primary products plummeted, placing the Thai economy in difficult straits, the same position as other countries exporting primary products.

Exports of rice accounted for over 40% of the value of Thai's exports, but the sluggishness of the market made export at the old exchange rate difficult. Up until then, the government had applied an exchange rate of US\$1=12.5 baht for rice due to its foreign competitiveness, compared with the rate of US\$1=21.5 baht for general exports, but to deal with the new situation, it abolished the double exchange rate system and applied the general exchange rate to exports of rice as well.

Thailand enjoyed a surplus on its trade balance for an entire century after opening its doors to Western Europe (1855), except for a certain period during World War II. In 1952, however, it registered a deficit for the first time. The Thai government, recognizing the need to increase exports and to industrialize, established the "State Enterprise Establishment Law" in 1953 and adopted a policy of industrialization led by the government. In 1954, it established the "Act on Promotion of Industries 1954" and began to encourage industrial investment and establish systems for receipt of foreign capital.

From 1953 to 1962, the government established over 100 state-run enterprises in the fields of paper, pulp, spinning, cement, sugar, hemp bags, etc. Government investment accounted for over 50% of all investment in industry. However, the state-run enterprises proved inefficient in operation from beginning to end and in the end merely created more pressure on state finances.

The establishment of the "Act on Promotion of Industries 1954" resulted in designation of certain industries for promotion (in the beginning, metal products, sugar, hemp bags, spinning, medicines, and ceramics and later other industries as well). These industries were given special privileges such as abatement of import duties on machineries and raw materials, protection by restrictions on imports of similar products, and permission for overseas remittances of profits, and foreign affiliates were assured they would not be nationalized. In this way, the system for foreign investment was laid down well, but problems in implementation, etc., prevented actual progress.

The "Diagnosis of the Thai Economy and Recommendations Thereon" by the World Bank in 1959 recommended private sector led industrialization and positive introduction of foreign investment and completely rejected the value of the state enterprise led industrialization. The World Bank recommended that the government reduce its role in Thailand's industrialization further than in the past, limit itself to preparing the social

capital for industry, and leave economic development to the activity of private capital (including foreign capital) based on the principles of profit and competition.

Based on the recommendations of the World Bank, the "National Development Board" was launched in 1959 and began drafting the first 6-year plan for economic development (1961 to 1966). In the same year, the "Board of Investment" was established. In 1960, the "Industrial Investment Promotion Act 1960" was established, thus preparing the environment for investment and introduction of foreign capital.

## (2) Promotion of Import Substitution Industries and Introduction of Foreign Investment (1961 to 1971)

This period corresponded to the first 6-year plan for economic development (January 1961 to September 1966) and the second plan for social and economic development (October 1966 to September 1971).

The first development plan was drafted and executed along the lines of the 1959 World Bank recommendations. Reemphasis was placed on agricultural development and similar emphasis placed on industrial development. As a result of the adoption of the policy of private sector led industrialization, the old industrialization policies based on state enterprises were abolished and the government limited its role to the establishment of an infrastructure for industry, such as the supply of electric power, transportation systems, and communication systems required for private sector investment in industry and legal measures for the promotion of investment activities.

The second development plan followed the same basic line as the first plan, continuing the emphasis on agriculture and stressing the increase of industrial production, particularly in the manufacturing sector.

The "Promotion of Industrial Investment Act 1960" was a revision of the "Act on Promotion of Industries 1954". It concentrated authority for allowing investment in the Board of Investment (BOI), established in 1959, and aimed at promotion of both domestic and foreign investment, but did not result in the amount of foreign investment initially envisioned, so it was revised again in 1962.

The "Industrial Investment Promotion Act 1962" formed the basis for Thailand's industrialization in the 1960s, i.e., the 10 years up to 1972. The main points of the Act were (1) priority to private enterprises (public enterprises were to avoid competition with private enterprises), (2) promotion of import substitution industries (through grant of special privileges such as preferential tax measures for promoted companies), (3) positive introduction of foreign capital (through permission for land holdings, liberalization of overseas remittances of principle and profits on investments, etc.)

From 1960 to 1970, the manufacturing industries displayed a high growth rate of 11.2% a year (compared with a growth in the GDP of 9.67% and agriculture of 6.01%). The share of the manufacturing industries in the GDP rose from 12.5% to 15.9% and the number of factories increased from 16,000 to 50,000, rising about three-fold. These may be said to have been quite good results.

At the foundation of Thai's industrialization was the textile industry. This was promoted as an import substituting industry during the first economic development plan and later aided the growth of modern industry in Thailand. Further, regardless of the rate of achievement of the second development plan, there was striking growth in the private sector, as represented by the manufacturing industries.

The reason why Thailand was able to achieve such success in the early stage of its industrialization was that there were external factors working to its advantage, i.e., the direct demand and indirect effects of the Vietnam War demand throughout this period. The contribution of the Vietnam war demand rose gradually from the 0.32% in 1962 to a peak of 4.21% in 1968. Further, a 10% increase in the Vietnam War demand was considered to have had the effect of increasing domestic consumption by 4.2% and investment by 2.6% and spurring imports (5%).

At the end of the 1960s, demand for rice, rubber, tin, and other primary products retreated and prices fell. Further, there was a sharp rise in imports of capital goods and materials due to the promotion of import substitution industries. These factors led to unprecedented trade deficits. Unfortunately, the Vietnam War demand began to drop at this time and dropped to almost zero in the following year 1976 when the Vietnam War came to an end. It therefore became necessary to reevaluate the industrialization policy as are based on domestic demand rather than war demand.

### (3) Promotion of Export Industries Using Domestic Materials (1972 to 1976)

From 1969, the Thai economy deteriorated. In addition to the reduction in the Vietnam War demand and the plummeting prices of primary products worldwide, there were problems in the industrialization programs which followed in the 1960s.

The import substitution industrialization policies of the 1960s focused on consumer goods for domestic demand, aimed the introduction of foreign capital as a major target, and did not assume future exports. Therefore, it formed an industrial structure where progress in industrialization was accompanied by increased imports. Further, the only foreign investments in Thailand were aimed at securing a share of the Thai domestic market, so naturally the scale of production was small and the merits of scale which result from mass production were not utilized. Protectionist measures such as

high duties ensured a viable domestic market for the manufacturers but did not help give them price competitiveness on the international markets. A typical example of this was the automobile industry.

Confronted with continually increasing trade deficits, Thailand found it had to promote the industries using domestic materials and further had to export not only agricultural products, but industrial manufactures as well.

Under this situation, in 1969 the government established an industrialization policy based on domestic materials. In 1970, it raised import duties and business taxes so as to suppress imports and adopted selective measures for investment by foreign firms.

The third social and economic development plan was formulated and executed against this background. The plan gave as targets for the industrialization program the active use of domestic materials, the promotion of labor intensive industries, local siting of industry, promotion of domestic demand, promotion of industries able to produce a surplus for export (for example, hemp bags, cement, cotton yarn, garments, sugar, building materials, tires, edible oils, etc.), and strengthening of international competitiveness. On the other hand, it also focused on the resolution of problems in financing systems, taxes, and administrative services.

The rates of growth achievement by the individual sectors based on the third plan were almost all over the targets, with the growth rate of the manufacturing industries exceeding the target of 8% with an average annual 11%.

In October 1972, the "Investment Promotion Act 1972" was established to take the place of the "Industrial Investment Promotion Act.1962". There were two main revisions which are as follows:

[1] Promotion of export industries (exemption of import duties and business taxes for imports of raw materials used for export products)

[2] Regional dispersion of industrial locations (extension of special privileges such as those on taxes for industries newly locating in specific regions, with the aims of regional development, correction of the income gap between the urban and rural areas, and promotion of agriculture-based industries)

However, after 1974, foreign investment dropped sharply and investment in import substitution industries reached full circle. No progress was observed during the period of the third plan with the policy target of "establishment of large-sized enterprises by the private sector in petrochemicals, ferrous metals, food processing, and machinery".

#### (4) Reorganization of Industrial Structure/Regional Location of Industries (1977 to 1981)

The fourth development plan took over the unrealized targets of the third plan and called for quick recovery of business in the short term, eradication of poverty in the long term, and promotion of equality in the economic and social order.

The share of the agricultural sector in the GDP in 1976 was 29.8%, while that of the manufacturing industries was 19.2%. The fourth plan set targets for these shares in 1981 of 23.9% and 22.9%, respectively. This indicated that the government ranked the industrial sector on an equal level with the agricultural one and sought to escape from dependence on agriculture.

The main policy lines in this phase of industrialization are summarized below:

[1] Reorganization of industrial structure: The government aimed at the reorganization of the industrial structure through priority promotion of basic industries, agro-industries, and labor-intensive small- and medium-sized industries, and through regional dispersion of industries. Toward this end, it devised measures such as government capital participation in basic industries (ferrous metals, fertilizers, paper and pulp, oil, etc.) and promotion of regional siting of industries which process agricultural products (through provision of facilities and granting of special privileges).

[2] Promotion of export-oriented industries and import substitution industries: The government reviewed its incentives and special privileges and decided to promote export-oriented industries through development of export markets, financial assistance, and construction of export processing zones and import substitution for intermediate goods and capital goods through reforms of the tax structure, etc. (after reflecting upon the increase in imports of intermediate goods and capital goods due to the past import substitution industries having succeeded in substitution of imports of finished goods, it was decided to promote industries able to substitute the intermediate and capital goods).

[3] Regional dispersion of industry: Measures were devised such as application of special privileges under the "Investment Promotion Act 1977", the application of low transport fees and power rates, the construction of industrial estates in the regional areas and the expansion of the loan framework of the IFCT and SIFO for regionally located enterprises.

[4] Reevaluation of state-run enterprises: The government promoted the sale of state-run enterprises, except for the industries of tobacco, other monopolies, and munitions, to the private sector and gave consideration to establishment of government enterprises for projects requiring massive capital investment, projects requiring advanced technology, and resource development projects.

The institutional basis for industrialization after 1977 was provided by the "Investment Promotion Act 1977" which provided three incentive systems covering [1] generally promoted companies, [2] promoted enterprises located in encouraged regions and [3] export-oriented companies. Further, compared with the former Investment Promotion Act, it more stressed tax incentives on imported raw materials and laid emphasis on export-oriented industrialization.

The share of the agricultural sector in the GDP was reduced from 29.8% in 1976 to the targeted 23.9% in 1981 (nominal base). On the other hand, the share of the manufacturing sector in the GDP increased from 19.2% in 1976 to 20.1% in 1981, not reaching the targeted 22.9%, but good enough to enable us to say the target of reorganizing the industrial structure during the 4th plan was realized.

#### (5) Increase in Foreign Investment and Metamorphosis to a Quasi-Industrialized Nation (1982 to 1986)

The fifth 5-year plan, which began from October 1981, presented as policy goals the improvement of finances and the trade balance and the improvement of the production structure and the elimination of poverty in the less developed regions, and it aimed at conversion of the Thai economy to one of a quasi-industrialized nation.

The sluggish growth in the world economy, the rise of protectionism, and the slump in the prices of primary products resulted in a decline in the economic growth rate during the period of the plan from the 7% line enjoyed up until then to 4.9%. A slowdown in growth was also seen in the manufacturing industries to 5.6%, resulting in a rapid deterioration in the foreign balance and financial deficits. The foreign debt balance as of the end of 1985 grew to US\$14.7 billion and the debt service ratio reached 21.8%.

However, with the advent of the 1980s, foreign investment began increasing and after 1983 scaled up favorably (Table I-1-1), thereby accelerating Thai's industrialization. At the same time, the investment projects grew in size, and there was relatively steady progress in the attraction of export type and labor-intensive type industries.

While foreign investment tumbled once in 1982, after 1983 the advanced nations took another look at investment in Thailand. This, plus effort on the part of the Thais, resulted in an increase in major export-related investments and a shift of labor-intensive industries from the NIEs. In particular, during this period, Japanese enterprises began contributing greatly to Thai exports. Japanese investment in Thailand began with investment in import substitution industries in the 1960s and was followed, after a lull due to the oil crisis, by a period of new investment in the export industries.



Due in part to the slump in the agricultural sector, the share of the manufacturing industries in the GDP finally surpassed that of agriculture in 1984. A look at the GDP (nominal base) by industry (1986) shows the share of agriculture, forestry, and fisheries falling considerably to 16.7%, under the 20.6% of the manufacturing industries (Table I-1-2). A look at the contributions to the growth of the GDP (1986) too shows the contribution by the manufacturing sector at 30.8%, far higher than the 7.9% of agriculture (Table I-1-3). Detailed data for 1987, such as GDP structure by industry, the industrial contribution ratio to GDP growth and so on are not publicized yet. According to NESDB, the actual GDP growth rate for 1987 was recently announced to be 7.1%. The growth rate in the agricultural sector was -2.5%, versus 10.2% in the industrial sector, which indicates a more notable expansion of the industrial sector.

Looking at the trends in exports during the period of the plan, there was striking growth in exports of industrial manufactures (Table I-1-5). Looking at the share in overall exports, agricultural, forestry, and fishery products' share from the 52% in 1981 to 37.9% in 1986, while industrial manufactures rose in export value steadily every year from the 35.8% in 1981 to 55.4% in 1986 (Table I-1-5). This data shows how quickly Thailand's export industrialization proceeded during this period.

On the other hand, the metropolitan area, which accounted for 39% of the country's production in 1970, continued growing until it accounted for 44% of the total production in 1985, further aggravating the gap with other regional areas.

Faced with the three headaches of trade deficits, fiscal deficits, and cumulative foreign debts, the government found itself with few policy options. With no prospect of a recovery in the prices of primary products, the government had to strive to increase exports of manufactured goods and, further, to attract investment in the export and labor-intensive type industries to resolve the unemployment problem.

**Table I-1-1. Number of Applications for Investment to BOI  
and Value of Registered Capital (Application Base)**

Year	No. of applns.	Value of registered capital (100 million bahts)	Of which, foreign investment	
			No. of applns.	Value of registered capital (100 million bahts)
1980	245	117	N.A.	N.A.
1981	265	179	N.A.	N.A.
1982	200	50	N.A.	15
1983	341	103	N.A.	25
1984	376	122	N.A.	41
1985	325	150	N.A.	48
1986	431	158	134	48
1987	1,057	572	639	252

Note: "N.A." is marked where no data was publicized by Thai government.

Source: JETRO White Paper on Investment, each year

**Table I-1-2. GDP Structure by Industry (Nominal Base)**

(Unit: 100 million bahts)

(% share in parentheses)

	GDP Total	Agriculture, Forestry, and Fisheries	Manufacturing	Other Industries
1950	256(100)	146(57.0)	32 (1.3)	78(41.7)
1955	395(100)	178(45.2)	50(12.6)	173(42.3)
1960	558(100)	214(38.9)	73(10.5)	271(40.6)
1965	843(100)	324(38.4)	119(14.2)	400(47.4)
1970	1,359(100)	387(28.5)	217(15.9)	755(55.6)
1975	2,972(100)	941(31.7)	544(18.3)	1,487(50.0)
1980	6,849(100)	1,738(25.4)	1,345(19.6)	3,766(50.0)
1981	7,862(100)	1,879(23.9)	1,583(20.1)	4,400(56.0)
1982	8,461(100)	1,887(22.3)	1,647(19.5)	4,927(58.2)
1983	9,243(100)	2,044(22.1)	1,762(19.1)	5,437(58.8)
1984	9,916(100)	1,934(19.5)	1,968(19.8)	6,014(60.7)
1985	10,477(100)	1,983(17.4)	2,077(19.8)	6,417(62.8)
1986 <sup>P</sup>	10,984(100)	1,830(16.7)	2,266(20.6)	2,888(62.7)

Note: For 1986, tentative figure

For 1987, not published yet

Source: For 1950,55; ECAFE: Economic Survey of Asia and Far East, 1957

For 1960, 65, 70, 75; National Statistical Office: Statistical Yearbook

Thailand

For 1980 on, Bank of Thailand, Quarterly Review

**Table I-1-3. Contribution to Growth of GDP (Nominal Base)  
by Industrial Sector**

(Unit: 100 million bahts)

	1985	Share (%)	1986	Share (%)	Growth(%)	Contribution to Growth (%)
Agriculture, forestry, and fisheries	1,785	(17.1)	1,830	(16.7)	2.5	7.9
Manufacturing industries	2,090	(20.1)	2,266	(20.6)	8.4	30.8
Other industries	6,538	(62.8)	6,888	(62.7)	5.4	61.3
GDP	10,413	(100)	10,984	(100)	5.5	100.0
Net overseas revenue	Δ409		Δ426			
GNP	10,004		10,558			

Source: BOI

**Table I-1-4. Main Economic Indicators During Development Plans (Actual)**

	1st (61-66)	2nd (67-71)	3rd (72-76)	4th (77-81)	5th (82-86)
Economic growth rate (real, annual %)	8.1	7.2	6.2	7.1	4.9
Growth of agricultural production (annual %)	4.6	4.1	3.9	3.5	2.9
Growth of industrial production (annual %)	10.2	9.7	8.6	8.7	5.6
Increase in exports of goods (nominal/annual %)	8.7	4.1	14.0	20.0	7.6
Saving rate (% , nominal GDP)	26.0	20.4	24.6	22.6	18.2
Investment rate (% , nominal GDP)	25.4	24.1	23.6	26.7	22.7
Rise in consumer prices (annual%)	2.3	1.5	12.5	11.6	2.7
Current account deficit (% , of nominal GDP)	-	2.5	1.7	6.3	4.7
Fiscal deficit (% , of nominal GDP)	0.7	2.9	2.7	3.3	3.7

Note: For 5th plan, figures for four years (1982 to 1985)

Source: NESDB

Table I-1-5. Trends in Exports by Types of Goods (1981 to 1987)

	1981	1982	1983	1984	1985	1986	1987
Agricultural Produce	72,998	73,150	66,484	78,292	73,398	73,397	81,496
Increase over previous year (%)	16.8	0.2	-9.1	17.8	-6.3	0.0	11.0
Composition (%)	47.7	45.8	45.4	44.7	38.0	31.5	27.0
Marine Produce	6,632	7,636	8,225	8,684	10,590	14,853	17,669
Increase over previous year (%)	19.6	15.1	7.7	5.6	21.9	40.3	19.0
Composition (%)	4.3	4.8	5.6	5.0	5.5	6.4	5.9
Industrial Manufacturers	54,743	63,205	61,358	76,095	95,615	129,170	177,253
Increase over previous year (%)	27.1	15.5	2.9	24.0	25.7	35.1	37.2
Composition (%)	35.8	39.6	41.9	43.4	49.4	55.4	58.8
Others	18,628	15,737	10,405	12,166	13,763	15,928	25,038
TOTAL	153,001	159,728	146,472	175,237	193,366	233,178	301,456

Note: Figures for 1987 are estimates from figures from January to September.

Source: Bank of Thailand monthly report

## 1-2. Current State of Industrialization

Thailand's industrialization process in full swing began in the 1960s. The first development plan was formulated, a foundation for industry laid, and domestic and foreign private sector investment was promoted through the "Promotion of Industrial Investment Act 1960", as mentioned earlier.

### (1) Growth and Production of Manufacturing Industries and Changes in Export Structure

In 1950, agriculture, forestry, and fisheries accounted for 57% of the GDP and the manufacturing industries for a mere 1.3%. In 1986, the share of agriculture, forestry, and fisheries fell to 16.7%, while the share of manufacturing industries rose to 20.6%, making the manufacturing sector more important in the economy than agriculture. This may be said to have been considerably fast growth.

The real growth rate in the manufacturing sector was considered to have been 4% to 5% in the 1950s. From the first economic plan to the fourth plan, an average annual 9% to 10% growth rate was achieved. While the growth rate slowed down somewhat to 5.6% in the fifth plan, the sector continued to grow at twice the speed of the agricultural sector in both periods (Table I-1-4).

A look at industrialization according to the trends in the composition of added value in the manufacturing sector by industry (Table I-1-7) shows that three industries, food, beverages, and tobacco, accounted for 60% of the total added value in the manufacturing sector in the 1960s, but fell to 30% in 1985. In particular, the share of food, including rice polishing, fell from 42% in 1960 to 15% in 1985, a remarkable fall in importance. As opposed to this, the textile industry, including garments, rose considerably in share from 12% in 1960 to 27% in 1985 to surpass the added value of the food industry.

A look at the composition of added value by types of goods shows the share of consumer goods falling from 77% in 1960 to 56% in 1985, and conversely the share of intermediate goods rising from 16% to 24% and capital goods rising from 7% to 16%.

However, these changes primarily occurred in the 1960s. From 1970 on, there were no rapid structural changes such as seen in the 1960s. In any case, there was a striking fall in the share of the consumer goods industries from the 1960s through the 1970s, but the share of intermediate goods and consumer goods grew in the 1960s and then slowed down in the 1970s. The basic structure of Thailand's industry today was formed by the import substitution industrialization of the initial stage of industrialization and was fairly consolidated by around 1970.

A look at the export structure too shows the export value of manufactured goods being less than 1% in 1960, but rising steadily to 4% in 1970 and 22% in 1980, thus displaying strong growth in the 1970s, and reaching 55.4% in 1986 and 58.8% in 1987 (Table I-1-5). Exports of industrial manufactures in the 1960s were primarily comprised of sugar, other foods, and other processed primary products, but starting in the 1970s, Thailand was exporting textiles and in the late 1970s was exporting other diverse items as well. In addition to textiles, it was exporting garments, plastic products, cement, glass, and radios. In the 1980s, it began exporting ICs and sharply rising amounts of jewelry, textiles and garments, and canned marine produce. Table I-1-6 shows the trends in the top 10 export items in recent years.

## (2) Structure of Thai Industry Indicated by the Number of Factories

When looking at the development of Thai industry, the trends in the number of factories registered with the Ministry of Industry are rich in suggestions. However, these statistics are derived from the registration system under the Factory Law, so it is not clear whether the factories concerned ever started operation, are currently in operation, or invested the amount of capital as registered. Further, they do not allow one to obtain a grasp of the state of very small factories, which are not obliged to register themselves.

(Note) Article 5 of the Factory Act of 1947 stipulated that all factories in industries designated by ministerial ordinance and having machines with a total of 2 hp or more or seven or more employees were obligated to register themselves, but there are many business establishments of a smaller size which are thus not obliged to register.

The cumulative number of registered factories in Thailand rose from 1,154 in 1947 to 16,007 in 1960, 50,535 in 1970, and 85,480 in 1986 - growing by leaps and bounds (Table I-1-8). By industry, as of 1978, rice polishing factories accounted for over half of all factories, i.e., 55% (Table I-1-9).

In 1969, the new Factory Act was established, but since the classifications of industry are not the same as in the old law, it is impossible to obtain an accurate grasp of the trends in the industries. However, the following may be pointed out.

The main industries in the early 1960s were mostly primary processing industries such as rice polishing, flourmaking, and lumbering, with production of traditional consumer goods being predominant. In the latter half of the 1960s, somewhat more advanced industries began to appear, such as wood products, metalworking, jewelry

processing, castings, and metal plating. Next, in the 1970s, there was an increase in the number of factories engaged in auto assembly and repair, engine repair and parts production, processing of plastic housewares and durable consumer goods. In the 1980s, there was a striking rise in the number of factories producing capital goods, such as metal products, general machinery, and transport machinery. In 1984, factories producing capital goods accounted for 34% of the number of registered factories (Table I-2-7), not including rice polishing factories. Some factories were also starting production of precision items such as ball bearings. In this way, the level of industrialization has been becoming more and more advanced.

Looking at the number of factories (registered factories as of 1979), excluding rice polishing factories, by the number of employees and region, 64% of all factories were small-scale, i.e., cottage industries, with less than 10 employees, and 93% were small-sized factories with less than 50 workers. Only 1.2% of the factories were large-size with over 200 workers (Table I-1-10). Small-sized factories are predominant in Thailand and this structure of the manufacturing industry is very similar to the one in Japan. Nearly 70% of the factories located in Bangkok were small-size with less than 10 workers, a higher ratio than in any other region. As opposed to this, in the industrialized provinces near Bangkok, 45% of the factories had less than 10 workers, a lower rate than other regions, and 17% were medium- and large-scale with over 50 workers (4% in Bangkok), higher than in other regions. This is due to the fact that geographical factors make securement of factory sites in Bangkok difficult, and further, the government has adopted a policy of dispersing industries outward, resulting in location of large-sized factories in the nearby provinces.

A look at the regional distribution of factories shows that as of 1986, about 39% of the factories were located in the central region (20% in Bangkok), 17% in the North, 36% in the East, and 8% in the South, with factories thus concentrating in the regions around Bangkok (Table I-1-11). However, a look at the number of factories excluding rice polishing factories shows 70% located in the central region and as much as 43% concentrated in Bangkok (Table I-1-10).



Table I-1-6. Trends in Top 10 Export Items

(Unit: Billion bahts)

	1984	Value	1986	Value	1987	Value	1988	Value
1.	Rice	25.9	Garments etc.	20.7	Garment etc.	36.7	Garments etc.	43.4
2.	Garment etc.	19.2	Rice	20.3	Rice	22.7	Jewelry/Precious Stones	29.0
3.	Tapioca	16.6	Tapioca	19.1	Tapioca	20.7	Rubber	23.5
4.	Rubber	13.0	Rubber	15.1	Rubber	20.4	Tapioca	21.6
5.	Maize	10.1	IC	13.6	Jewelry/Precious Stones	19.7	Rice	19.6
6.	Jewelry/precious	7.4	Jewelry/Precious Stones	11.2	IC	15.2	IC	18.9
7.	IC	7.4	Canned Marine Produce	10.2	Canned Marine Produce	13.2	Canned Marine Produce	14.2
8.	Tin	5.3	Fabrics etc.	10.9	Fabrics etc.	12.2	Fabrics etc.	13.5
9.	Sugar	5.2	Maize	9.2	Sugar	8.6	Shoes	9.0
10.	Canned Marine	3.7	Sugar	7.3	Shoes	5.9	Sugar	8.5

Source: Ministry of Commerce 1988 export targets (revised) (announced March 1988)

**Table I-1.7. Share of Manufacturing Value Added by Industrial Subsectors at Current Market Price**

(Unit: Million Baht)  
(%)

Industrial Subsectors	1960	1965	1970	1975	1980	1984	1985	1986
Food processing	1,881 (31.45)	3,044 (31.76)	4,967 (23.18)	11,216 (22.29)	18,216 (13.85)	26,673 (13.81)	27,513 (13.38)	26,690 (11.93)
Beverage	643 (10.75)	1,104 (11.52)	2,224 (10.38)	4,034 (8.02)	10,919 (8.30)	16,965 (3.79)	20,016 (9.74)	17,876 (7.99)
Tobacco	879 (14.70)	1,194 (12.46)	1,984 (9.26)	3,929 (7.81)	7,985 (6.07)	11,879 (6.15)	12,086 (5.88)	12,869 (5.75)
Textiles	160 (2.68)	359 (3.75)	1,705 (7.96)	4,622 (9.19)	11,808 (8.98)	12,007 (6.22)	13,194 (6.42)	13,753 (6.15)
Wearing apparel	266 (4.45)	321 (3.35)	1,148 (5.36)	3,577 (7.11)	14,178 (10.78)	27,566 (14.28)	31,036 (15.10)	34,235 (15.30)
Leather products	119 (1.99)	131 (1.37)	137 (0.64)	214 (0.43)	486 (0.37)	910 (0.47)	1,244 (0.61)	1,813 (0.81)
Wood and wood products	289 (4.83)	565 (5.90)	597 (2.79)	1,752 (3.48)	3,206 (2.44)	3,242 (1.68)	3,241 (1.58)	3,081 (1.38)
Furniture	88 (1.474)	113 (1.18)	316 (1.47)	577 (1.15)	1,233 (0.94)	1,965 (1.02)	2,024 (0.98)	2,130 (0.95)
Paper and paper products	24 (0.40)	28 (0.29)	161 (0.75)	238 (0.47)	1,653 (1.26)	2,118 (1.10)	2,244 (1.09)	2,470 (1.10)
Printing and publishing	132 (2.21)	214 (2.23)	552 (2.58)	1,982 (3.94)	2,993 (2.28)	3,873 (2.01)	4,012 (1.95)	4,101 (1.83)
Chemicals and chemical products	421 (7.04)	613 (6.40)	1,509 (7.04)	2,743 (5.45)	9,170 (6.97)	14,386 (7.45)	16,279 (7.92)	17,265 (7.72)
Refinery and refinery products	264 (4.41)	626 (6.53)	1,622 (7.57)	4,930 (9.80)	14,534 (11.05)	16,784 (8.69)	18,674 (9.08)	30,950 (13.84)
Rubber and rubber products	224 (3.75)	246 (2.57)	359 (1.68)	875 (1.74)	3,062 (2.33)	3,447 (1.79)	3,232 (1.57)	3,013 (1.35)
Non metallic	—	—	1,418 (6.62)	2,639 (5.25)	8,561 (6.51)	13,443 (6.96)	14,345 (6.98)	15,022 (6.72)
Basic metal	17 (0.28)	9 (0.09)	227 (1.06)	745 (1.48)	2,943 (2.24)	2,228 (1.15)	2,876 (1.40)	2,424 (1.08)
Metal products and machinery	206 (3.44)	778 (8.12)	508 (2.37)	1,196 (2.38)	2,684 (2.04)	3,416 (1.77)	3,934 (1.91)	4,214 (1.88)
Elec. machinery and appliances	27 (0.45)	32 (0.33)	314 (1.47)	663 (1.32)	3,148 (2.39)	4,460 (2.31)	4,364 (2.12)	4,826 (2.16)
Transport and equipments	242 (4.05)	308 (3.21)	1,078 (5.03)	3,585 (7.13)	11,416 (8.68)	20,651 (10.70)	17,436 (8.48)	17,355 (7.76)
Miscellaneous products	—	—	507 (2.37)	893 (1.78)	3,431 (2.61)	7,171 (3.71)	7,898 (3.84)	9,697 (4.34)
<b>TOTAL</b>	<b>5,980.36</b>	<b>9,583.95</b>	<b>21,432.54</b>	<b>50,309.80</b>	<b>131,525.92</b>	<b>193,087.66</b>	<b>205,551.80</b>	<b>223,688.29</b>

Source: National Accounts Division, NESDB

**Table I-1-8. Trends in Number of Registered Factories**

Year	No. of Registered Factories
1947	1,154
1950	1,561
53	2,006
55	2,528
57	10,409
1960	16,007
63	27,337
65	38,458
67	43,420
1970	50,535
75	44,135
77	49,817
78	60,296
79	N.A.
1980	N.A.
81	80,195
82	85,996
83	91,223
84	93,505
85	85,055
86	85,480

Note: NA means figures did not appear in domestic source materials.

Source: Factory Control Division, Ministry of Industry

**Table I-1-9. Number of Factories by Main Industries (1978)**

	No. of Factories (in Bangkok)		Share (%)
Rice Polishing	33,166	(155)	55.0
Flour Making	2,896	(4)	4.8
Engine Manufacture and Repair	2,100	(519)	3.5
Lumbering	2,091	(654)	3.5
Metal Products	2,051	(1,798)	3.4
Printing and Publishing	1,537	(1,342)	2.5
Auto Repair	941	(427)	1.6
Chemicals (Plastic household products, containers, etc.)	918	(820)	1.5
Automobile and Auto part manufacture and assembly	841	(474)	1.4
Metal materials for construction use	738	(545)	1.2
Textiles	720	(358)	1.2
Rice Flour Foods (bread etc.)	623	(260)	1.0
Gravel and other materials for Construction use	586	(42)	1.0
Furniture	586	(298)	1.0
Icemaking	504	(44)	0.8
Others	9,998	(5,214)	16.6
<b>TOTAL</b>	<b>60,296</b>	<b>(12,954)</b>	<b>100.0</b>

Note: This is the latest data which includes the number of Rice Polishing factories.

Source: Factory Control Division, Ministry of Industry

Table I-1-10. Number of Registered Factories by Scale (as of June 1979)

Size	Central Thailand					North			South		Entire Country
	Bangkok	Industrialized provinces near Bangkok	Other provinces	Total	Thailand	Thailand	Thailand	Thailand	Thailand		
Less than 10 workers	7,865(46.8) [68.4]	1,356 (8.1) [45.2]	2,983(17.7) [71.0]	12,204(72.6) [65.3]	1,224 (7.3) [56.8]	2,061(12.3) [58.5]	1,330 (7.9) [63.7]	16,819(100.0) [63.7]			
10-49 workers	3,174(40.3) [27.6]	1,128(14.3) [37.6]	1,029(13.1) [24.5]	5,331(67.7) [28.5]	719 (9.1) [33.3]	1,165(14.8) [33.0]	656 (8.3) [31.4]	7,871(100.0) [29.7]			
50-99 workers	262(26.0) [2.3]	264(26.2) [8.8]	102(10.1) [2.4]	628(62.4) [3.4]	146(14.5) [6.8]	172(17.1) [4.9]	61 (6.1) [2.9]	1,007(100.0) [3.8]			
100-199 workers	110(23.8) [0.96]	154(33.3) [5.1]	44 (9.5) [1.0]	308(66.7) [1.6]	31 (6.7) [1.4]	102(22.1) [2.9]	21 (4.5) [1.0]	462(100.0) [1.7]			
200-499 workers	52(25.0) [0.45]	76(36.5) [2.5]	21(10.1) [0.5]	149(71.6) [0.8]	28(13.5) [1.3]	15 (7.2) [0.4]	16 (7.7) [0.8]	208(100.0) [0.8]			
500-999 workers	21(30.9) [0.18]	18(26.5) [0.6]	14(20.6) [0.3]	53(77.9) [0.3]	6 (8.8) [0.3]	6 (8.8) [0.17]	3 (4.4) [0.14]	68(100.0) [0.3]			
1000 workers or more	12(36.4) [0.1]	6(18.2) [0.2]	7(21.2) [0.2]	25(75.8) [0.13]	22 (6.1) [0.1]	5(15.2) [0.14]	1 (3.0) [0.04]	33(100.0) [0.12]			
TOTAL	11,496(43.4) [100.0]	3,002(11.3) [100.0]	4,200(15.9) [100.0]	18,698(70.6) [100.0]	2,156(8.1) [100.0]	3,526(13.3) [100.0]	2,088(7.9) [100.0]	26,468(100.0) [100.0]			

Note: Under 1969 Factory Law, re-registration of all companies was required. The figures show the change of each year from the number of companies of that point of time. However, rice polishing factories are excluded. The industrialized provinces near Bangkok mean Samut Prakan, Pathumthani, and Nonthaburi.

Source: Factory Control Division, Ministry of Industry

**Table I-1-11. Regional Distribution of Registered Factories (1981 to 1986)**

	1981	1982	1983	1984	1985	1986
Entire Nation	80,197 (100.00)	85,996 (100.00)	91,223 (100.00)	93,505 (100.00)	85,055 (100.00)	85,480 (100.00)
Central Region	32,782 (40.88)	35,496 (41.27)	37,416 (41.02)	38,803 (41.50)	32,866 (38.64)	33,059 (38.65)
Bangkok	17,470 (21.78)	19,269 (22.41)	19,981 (23.23)	20,432 (21.85)	17,171 (21.19)	16,661 (19.49)
Industrialized Provinces near Bangkok	3,573 (4.46)	3,907 (4.54)	4,296 (5.00)	4,696 (5.15)	3,971 (4.67)	4,332 (5.07)
Other Central Region	11,739 (14.64)	12,320 (14.33)	13,139 (14.40)	13,675 (14.62)	11,724 (13.78)	12,040 (14.09)
North	12,815 (15.98)	13,617 (15.90)	14,656 (16.07)	14,971 (16.01)	14,339 (16.86)	14,445 (16.90)
Northeast	27,178 (33.89)	29,098 (33.84)	31,107 (34.10)	31,394 (33.57)	30,582 (35.96)	30,718 (35.94)
South	7,500 (9.35)	7,731 (8.99)	8,044 (8.82)	8,327 (8.91)	7,268 (8.55)	7,280 (8.52)

Note: The industrialized provinces near Bangkok mean Samut Prakern, Pathumthani and Nonthaburi, all of which are small in area.

Source: Factory Control Division, Ministry of Industry

### **1-3. Current Economic and Social Development Plan**

#### **1-3-1. Features and Structure of New Plan**

Since the start of the first plan, a quarter of a century has passed. During this time, the economy has grown at an average annual rate of close to 7%. As a result, the GDP has increased 20-fold or so from the 55.8 billion baht of 1960 to 1,098.4 billion baht in 1986 and the per capita income has risen from 2,100 baht to 20,266 baht, a 10-fold increase. Education has spread throughout the country and health services are extended throughout almost the entire nation as well.

The sixth 5-year plan for national economic and social development (October 1986 to September 1991) followed upon the fifth 5-year plan, which ended at the end of September 1986. In its formulation, consideration was given to the results of past development, the increases in the foreign deficit and fiscal deficit, the slowdown of economic growth, the slump in employment, the expansion of the disparity in development among regions and other emerging problems. The new plan gives priority to improvement of the foreign balance, aims at expanding employment rather than the growth rate, seeks to diversify industry with an emphasis on marketing rather than expanded production, promotes down to earth industrialization centered on the use of resources rather than heavy industries, and gives priority to small- and medium-sized projects rather than large-sized projects. In this way, it turns away from the emphasis on quantity-wise expansion of the past and rather seeks to coordinate industry so as to improve quality.

Further, the sixth plan moves away from the old vertical arrangement of plans by different agencies and takes an approach based on problem fields so as to enable more a flexible response by the various agencies.

And, it has both economic targets and social targets.

The economic targets are the maintenance of an average annual growth rate of 5%, increased employment, fair distribution of income and improvement of the economic balance. During the plan, it is expected that the supply of new labor will rise to over 4.1 million workers and the foreign balance and fiscal balance will both have to be urgently improved. The projected 5% growth rate is lower than the 7% growth achieved up to the fourth plan, but considering the slowdown in the growth of the world economy, the slump in prices of primary products, rising protectionism, and other changes in the external environment, it may be said to be fairly ambitious (Table I-1-12).

With the average annual 5% growth rate, the government aims at creating employment for 3.9 million workers in the next five years. The agricultural sector is

**Table I-1-12. Macroeconomic Indicators of Sixth 5-Year Plan of National Economic and Social Development**

	4th plan (actual)	5th plan (actual)	6th plan
Real GDP growth rate (% , annual rate)	7.1	4.9	5.0
Agriculture, forestry, and fisheries	3.5	2.9	2.9
Manufacturing industries	8.7	5.6	6.6
Mining	10.1	6.5	6.4
Electric power	11.7	8.0	6.1
Construction	9.5	3.6	5.1
Services	8.2	5.6	5.3
Real increase in demand (% , annual rate)			
Consumption	6.3	4.4	4.0
Private sector	5.5	4.6	3.7
Public sector	10.2	3.6	5.3
Investment	10.0	1.2	5.8
Private sector	8.6	0.6	8.1
Public sector	12.9	2.4	1.0
Growth in exports of goods and services (% , value base) -		9.0	9.9
Growth in imports of goods and services (% , value base) -		3.3	9.3
Growth in exports of goods (% , value base)	20.0	7.6	10.7
Growth in imports of goods (% , value base)	24.8	2.9	9.5
Trade balance (current prices)			
Average annual deficit (billion bahts)	45.0	57.3	35.9
Share of GDP (%)	7.7	5.9	2.7
Current balance			
Average annual deficit (billion bahts)	37.4	36.8	11.8
Share of GDP (%)	6.4	3.8	0.9
Ratio of fiscal deficit to GDP (%)	3.3	3.7	2.1
Rise in consumer prices (%)	10.6	2.7	2.3
Increase in population (%)	-	1.7	1.3

Source: NESDB



expected to grow by 2.9%, the same as in the fifth plan, but the government is targeting for a growth rate in the industrial sector of 6.6%, higher than the results (5.6%) of the fifth plan. It has high hopes for both the construction industry and manufacturing sector (Table I-1-12). This fits in with the recent growth in domestic demand, led by private capital investment, and the good export performance. The government has raised its target for exports from the current 7.6% to 10.7% and hopes to thereby improve the trade balance and current account deficit.

The social targets are the continued promotion of social development, the qualitative improvement in the national lifestyle, and the elimination of regional disparities in development and thus the ensurance of peace and fairness.

To achieve these goals, three strategies are considered necessary, namely, improvement of the efficiency of development, reorganization of the production structure and a suitable regional distribution of income and prosperity. Further, 10 programs have been established under the plan as the means for executing these strategies.

Improvement of the efficiency of development, the first strategy, means for example the improvement of human resources, use of science and technology, improved management of the public sector, and other improvements in the efficiency of development means and organizations. For this strategy, six programs are established, one each for macroeconomic management, human resource development, development of science and technology, resource and environmental development improvement of the administration of development, and improvement of state enterprises.

Reorganization of the production structure, the second strategy, means the diversification of production and markets to disperse risks, the reduction of production costs, improvement in the quality of goods and services, and emphasis on marketing for improvement of the infrastructure and production structure so as to withstand international competition. This includes two programs, one for production, marketing, and employment and one for improvement of basic services.

The third strategy calls for distribution of the fruits of development fairly among the people so as to raise the feeling of social fairness. This strategy includes two programs, one for development of urban areas and special zones and one for development of regional areas.

### 1-3-2. Macroeconomic Management Program

The main policy tasks of the sixth plan are (1) elimination of the external deficits and fiscal deficits, (2) promotion of savings, (3) diversification of the production structure, (4) creation of employment, (5) increase of income and reduction of regional disparities, and (6) development of natural resources and protection of the environment.

The macroeconomic management is aimed at the formation of fiscal and financial measures to change the production structure so as to enable achievement of growth over 5%, absorption of the increase in the labor supply (creation of employment for 3.9 million workers), and stabilization of the economy and finances. In particular, consideration is being given to development of key fields such as exports and tourism.

As for savings, they have not been sufficient up until now to cover investments. In particular, there was a marked drop in the savings rate during the fifth plan (from 23% of the GNP in 1980 to 20.6% in 1981, to 18% in 1983, and 17.9% in 1985). The reason for this was the growing urbanization and accompanying increase in consumption in the private sector and the recession, a narrow tax base, low price elasticity, and resultant shortage of tax revenues in the public sector. To eliminate this shortage in savings, the plan sets targets for economization in personal consumption and targets for savings rates (average 23.7% of GDP in sixth plan as opposed to actual 18.2% in fifth plan) and calls for improvement of the capital market, fostering of institutions providing long-term financing, and improvement of the tax structure.

Regarding private investment, the plan envisages a total of 1200 billion baht investment during its term (17.5% of GDP). To realize this, it proposes (1) encouragement of investment into key fields such as export industries, agro-industries, and tourism, (2) formation of and assistance to producer organizations, (3) coordination, reinforcement, and assistance to marketing and production, (4) coordination of the tax system for export promotion, i.e., through corporate taxes, business taxes, duties, etc., (5) improvement of the financial system, (6) adjustment of the level of domestic interest rates, (7) raise the ratio of net worth of companies, (8) improvement of financing and fiscal systems, (9) encouragement of private investment into public sectors such as transportation, communications, agriculture, development of marine resources, energy, education, and public health, and (10) encouragement of capital and management participation from private sector to the state-run enterprise sector.

The plan assumes a savings rate in the private sector of 21.4% of the GDP and an investment rate of 17.5%, for a savings-investment gap of 3.9% (surplus savings), and a savings rate and investment rate in the public sector of 2.3% and 7.4% respectively, for a savings-investment gap of 5.1% (surplus investment). The growth rate of

investment in the private sector is assumed as 8.1% and in the public sector at 1%, thus being high in the private sector and low in the public. Overall, much is expected from activity in the private sector. The government has taken a much clearer stance toward shifting to a role as a coordinator.

Regarding improvement of the tax structure, an overall reevaluation is being made from the viewpoint of increasing government revenues, ensuring fairness, and promoting investment. In particular, the current business tax system has inhibited production and created economic strains and complexity. In consideration of this, an ad valorem tax system is being introduced. A single tax rate will be applied and export goods will be exempted. For import duties, the tax system is being reevaluated taking consideration of efficient protection of domestic industry, production, and consumption. The tax drawback system is being adjusted to enable rebates according to IO table coefficients.

### **1-3-3. Production, Marketing and Employment Development Program**

This program aims at the reorganization of the production and marketing structure to deal more efficiently with the fluctuations in the global economy and trade.

One of the problems is that the structural changes in world trade have had a large minus effect on the export and production of traditional agricultural produce of Thailand. These traditional agricultural products are rice, tapioca, sugarcane, tobacco, rubber and maize. These alone account for 70% of all exports of agricultural, forestry, and fishery products and 50% of all production. The rate of increase in production of these traditional products has gradually fallen from 7.2% to 4.7% and 1.3% in the third, fourth, and fifth plans and is expected to be only 0.5% in the sixth plan. Further, the export price of these crops fell by 7.7% in the fifth plan. The basic reasons for this have been the improvement in the rates of food self-sufficiency in other countries, changes in preferences, technical innovations, etc., resulting in changes in the demand structure. This indicates that Thailand will soon no longer be able to depend on exports of such traditional products.

As to trade in industrial goods, there are trade barriers in the U.S., EC, and other advanced markets and problems with the ability to pay in developing countries. Exports to Thailand's main markets, the U.S., Japan, the EC, and the ASEAN nations shrank in share from the 69% of the fourth plan to 66% at the end of the fifth plan. Further, the exports are limited to primary products and canned marine produce, artificial flowers, toys, etc., with not much progress being made in diversification of the same.

There are severe problems with unemployment and poverty in the regional areas. In 1984, there were about 390,000 completely unemployed workers. This is projected to swell to between 700,000 and 800,000 by 1991. Further, it was estimated that there were

some 3.8 million seasonally unemployed workers in 1984 and another 11 million partially unemployed workers. Most of these concentrated in the agricultural sector and, regionally, in the Northeast.

To deal with these problems, this program establishes three targets and four strategies: The three targets are as follows:

[1] Reduction of the deficit on the trade balance and the deficit on the current account balance within the term of the plan to 2.7% and with a 0.9% ratio to the nominal GDP (actual figures for fifth plan were 5.9% and 3.8%). For this purpose, export revenues will be increased by 9.9%, somewhat higher than the results for the fifth plan, and tourist revenues by 7.4%.

[2] Creation of employment for 3.9 million workers during the plan so as to ease unemployment. Further, reduction of employment in the agricultural sector from 70% to 65% so as to ease the seasonal unemployment and partial unemployment in that sector.

[3] Elimination of poverty in the regional areas and income disparities

Further, the four strategies are as follows:

[1] Establishment of a production system for sales (conversion to production for aggressive sales and improvement of quality)

[2] Diversification of production (provision of information, including a list of 199 promising products, research and development, and technical training)

[3] Marketing development (marketing research and development, information systems, quality control, diversification of markets, public relations and advertising, etc.)

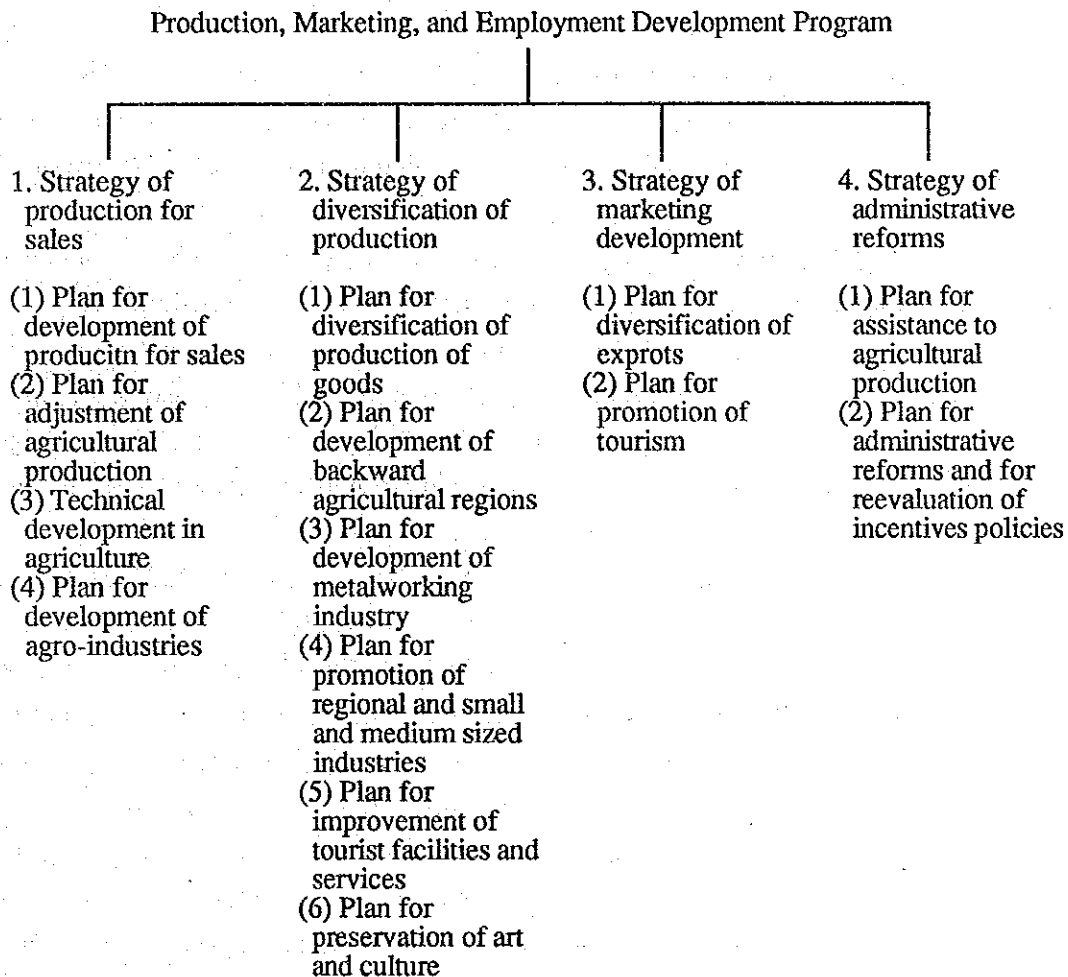
[4] Administrative reforms for marketing and production (reevaluation of incentives policies, establishment of public information system)

Further, the budget mentions 14 subprograms for these four strategies (Chart I-1-1). Below, a more detailed look will be taken at the main strategies.

First, for creation of employment, the plan calls for diversifying production and promoting structural changes so as to assist the absorption of the increasing supply of labor. The sixth plan lists five industries as important, namely, agro-industries, the metalworking industry, service industry, regional industry, and small- and medium-sized industries.

To increase export revenue, it is necessary to diversify agricultural produce and promote the agro-industries and export industries. The plan calls for an increase in export ability and provision of the required facilities and public services for reducing investment costs in these areas. The government will be providing assistance in the marketing required by small- and medium-sized export companies and in expenses for obtaining export-related information.

**Chart I-1-1. Sub-Programs for Production, Marketing, and Employment Development Program**



Note: No mention is made of industries other than the metalworking industry in that these are not the focal points of the sixth plan. The sixth plan does, however, give five industries as important: agro-industries, the metalworking industry, service industry, regional industry, and small and medium sized industries, in view of the four standards of labor intensiveness, use of regional resources, use of simple technology, and eradication of regional poverty.

The plan also calls for promoting service industries such as tourism, financing, and insurance to help generate foreign currency and increase employment. The government will be working to preserve and develop tourist sites in the regional areas and to improve the quality of local handicrafts and souvenirs.

To increase the income of farmers and create employment, the plan calls for diversification of agricultural production and industrial production. In particular, in the agricultural sector, it calls for increase of family revenue through diversification of cashcrops and the introduction of joint livestock raising and forestry production.

For diversification of industrial production, the plan calls for increasing income and employment by encouraging four key industries, namely, agro-industries, the metalworking industry, regional industry, and small- and medium-sized industries, selected with reference to the four standards of labor intensiveness, use of regional resources, use of simple technology, and eradication of regional poverty. To encourage the industries, consideration is being given to incentives, human resource development, supply of information and designation of strategic industries.

For the metalworking industry, it is considered necessary to proceed step by step to form "layers" of the industry. The outermost layer consists of final consumer products. Most of these are now being supplied domestically thanks to the development of import substitution industries. The next layer is comprised of the parts industries or supporting industries. The parts industries could produce the necessary parts domestically once a certain level of demand was secured. The next layer required for the parts industries is the metalworking industry and then the machinery industry and electrical machinery industry. It is these industries (metalworking machinery and electrical machinery) which are to be promoted in the sixth plan. In the seventh plan, it will be necessary to promote the casting and forging industry layers.

In particular, to achieve the goal of export promotion, the plan calls for listing 199 product groups and exploring the possibilities for development of the same. The standards for listing are (1) products making large use of domestic resources and which already have a certain market domestically and overseas and (2) products with a high ripple effect which lead to supply of raw materials to other industries, lead to creation of employment, etc. Most of the products selected are agricultural, forestry, and fishery products so while export diversification is spoken of, there is still an emphasis on primary products. However, of the 199 products, 38 are industrial goods such as footwear, toys, jewelry, garments, canned marine produce, canned fruit, furniture, plastic products, steel pipes, artificial flowers, wood products, tile, and other intermediate goods.

#### **1-3-4. Strides Taken to Asian NIES**

The Thai economy has continued at the top of the ASEAN nations. The GDP growth rate in 1987 was 5.6%, far larger than the 3.5% of 1986. In 1988 too, growth of 5.8% was projected and continued economic growth based on exports is expected.

One of the reasons given for the success of Thailand is the diversification of its industry. Thailand has made progress in its transition from an agricultural orientation to manufacturing and services and, in particular, has promoted its export industries, agro-industries and intermediate goods industries. In terms of the share in the GDP, the manufacturing industries have already pulled ahead of the agricultural sector. Japan and the Asian NIEs are pursuing global strategies to deal with rising production costs and this is leading to expansion and growth for Thai industry.

Foreign investment marked striking growth in 1987 reflecting the increasing importance of Thailand as a production center. There were 1,057 applications for investment to the BOI which in 1987, 2.45 times of 1986, with the aggregate registered capital of 57.2 billion baht (3.62 times of 1986), of which 25.2 billion baht (5.21 times of 1986) were the investment by foreign firms. The share of the foreign firms in the total new investment increased to 44% in 1987 from around 32% before that year. (Table I-4-1). Applications in 1988 are expected to be as high as in 1987, according to financial sources, and more increase of investment from Japan, Taiwan, Hong Kong, Singapore and Korea is likely anticipated.

Thailand is making large strides toward becoming the fifth Asian NIE in the changing international economic environment represented by Asia NIEs' prompt progress, revaluation of Japanese Yen, acceleration of international division of labor and such.

## **2. State of Industrial Promotion Policies**

### **2-1. History and Current Status of Industrial Promotion**

#### **2-1-1. General**

Thailand's industrial policies began with the establishment of the Act on Promotion of Industries 1954 and the National Economic Development Corporation (NEDC). To implement the policies, the Board of Investment (BOI) was launched. The aim of the policies was to suppress imports of consumer goods and to promote import-substitution type industrialization so as to reduce the deficits on the trade balance due to the deteriorating markets for primary goods. And as part of the program of assimilation of Chinese in Thailand, they also aimed to convert the commercial capital-oriented attitude into an industrial capital-oriented one and thus to assimilate the Chinese into Thai society. Under the law, the government took the lead in promotion of industry and established state-run enterprises for handling tobacco, sugar, hemp bags, paper, and the like. On the other hand, there was no progress seen in investment from the private sector, both domestic and foreign, due to the complexity of procedures, etc.

Thailand began shifting to industrial promotion based on the private sector after 1958. The government limited its role to the establishment of social capital and infrastructure for industrialization and sought to promote industrialization based on the market mechanism, as recommended by the World Bank. It established the Industrial Investment Promotion Act in 1960, which resulted in major changes in its public enterprise policy.

In the early 1960s, Thailand raised its import duties and considerably liberalized its investment policies, resulting in an increase in investment by foreign companies in Thailand that were avoiding tariff barriers and seeking the privileges accorded under the law. Progress was seen in textiles, home electrical appliances, automobiles, and other import-substituting industries.

Starting in 1972, the powers of the BOI were strengthened, and it was given the authority to decide on the period of exemption of corporate taxes and on special duties. Furthermore, in 1977, it was decided that the Prime Minister would take the position of chairman of the BOI, thus clarifying the role of the investment incentives of the BOI in the industrial promotion policies.

In the 1980s too, investment promotion measures are being taken by giving investment incentives to export-oriented industries and regionally located industries.



The current sixth 5-year plan lays stress in the industrial promotion policy on (1) promotion of small- and medium-sized industries and regional industries, (2) promotion of export industries, and (3) promotion of engineering and agro-industries. This does not represent any basic, major change from the fifth 5-year plan, but to increase the effectiveness of the measures taken, the old system, in which the planning agency, NESDB (National Economic and Social Development Board), took a hand in planning in all fields, was changed to one in which the NESDB would present the respective agencies with macroeconomic targets only for development, basic strategies for development, and main themes. Therefore, the respective agencies in charge were responsible for the formulation of specific development plans and main projects for each sector. Below, a summary will be given of the current state of industrial promotion policies of the BOI and the Ministry of Industry, which are the main agencies for industrial promotion, fiscal policies, and financial policies.

Note: The urban area comprises 6 provinces; the remaining 67 provinces are generally referred to as rural regions. A clear definition is not given of the engineering industry. It is widely referred to as the machinery and metal processing industries.

#### **2-1-2. Industrial Promotion Policies of BOI**

The BOI, organizationally speaking, is part of the Prime Minister's Office. It is chaired by the Prime Minister and sub-chaired by the Minister of Industry and is thus the highest policy-making organization in the government. Thailand has adopted the policy of promoting industry through domestic and foreign investment by the private sector so as to reduce the fiscal burden. The BOI has the authority to provide abatement of corporate taxes and business taxes and to give protection from competing imports. It is separate from the Ministry of Finance, which has jurisdiction over finance and taxes, and the Ministry of Industry, which controls manufacturing and the rest of the industrial sector.

As of February 1988, there were 6 sectors and 123 industries encouraged by the BOI. Minimum investment scales, export ratios, equity ratios, and other ancillary terms have been clearly set down for each industry. The number of industries encouraged can be increased when necessary, and industries may be deleted from the list when judged no longer to require encouragement (for details, see section on foreign investment policy).

A look at the relationship among the 3 main targets taken up under the sixth plan and the promotion policies of the BOI shows: [1] small- and medium-sized enterprises and regional industries, [2] export industries, and [3] engineering and agro-industries.

The policies of the BOI that proved most effective were those for the promotion of export industries. The toy industry is targeted as one of the major export-oriented industries and is rapidly expanding its export levels. Thai and the other ASEAN nations have found themselves in an advantageous position vis-a-vis exports due in part to current global economic conditions, but at the same time, it is an undeniable fact that the investment policies of BOI have won high regard, thus contributing to the rush to invest in Thailand. As for promotion of regional industries, the 4 regions previously designated by BOI as special zones for promotion of investment (1 city and 2 districts in the North, 1 city and 4 districts in central Thailand, 1 city and 1 district in the Northeast, and 1 city and 1 district in the South) were given further tax privileges, but there have been no visible effects from this. In 1986 and 1987, a steady increase in investment was seen, so in September 1987, BOI adopted a policy of attempting to prevent overconcentration in the metropolitan region and to promote investment in the regional areas by designating all provinces, even those not included in the previously encouraged regions. As for encouragement for investment in the regional areas (level 3), BOI has reduced the incentives for projects located in the metropolitan area (level 1) and regions adjoining the metropolitan area (level 2), thus taking the stance of emphasizing regional development.

In terms of measures for promotion of small- and medium-sized enterprises, BOI reduced the minimum investment level for BOI's investment promotion from October 1986, in particular reducing the minimum for export industries from 5 to 1 million baht.

To promote engineering industries, including the mold and die industry, BOI established a project team in 1985, prepared a list of local metal and machinery related companies, and began introducing them to foreign companies that were searching for joint venture partners. Further, it recognized incentives for indirect exports of the mold and die related industry and other supporting industries not oriented to direct exports, thus striving to nurture the engineering sector, a peripheral industry whose position in the industrial structure was unbalanced.

### **2-1-3. Industrial Promotion Policies of the Ministry of Industry**

#### **Organization**

The Ministry of Industry is in charge of the industrial sector and the manufacturing field. The structure of the Ministry of Industry is given in the attached table. Leaving aside sections governing special industries such as petroleum and energy, it comprises 4 departments and 1 secretarial office. Of these, the Mineral Resources Department, Industrial Standards Institute, and Industrial Works Department provide guidance,

protection, and supervision of the related industries and factories from their respective standpoints. The IEPD (Industrial Economic and Planning Division) plans and drafts industrial policies for the automobile industry, textile industry, etc., from the basic viewpoint of industrial promotion, coordinates related government agencies, and executes policy. The DIP (Department of Industrial Promotion) deals with technical and business guidance, including financing, for small- and medium-sized enterprises.

#### Promotion Policies

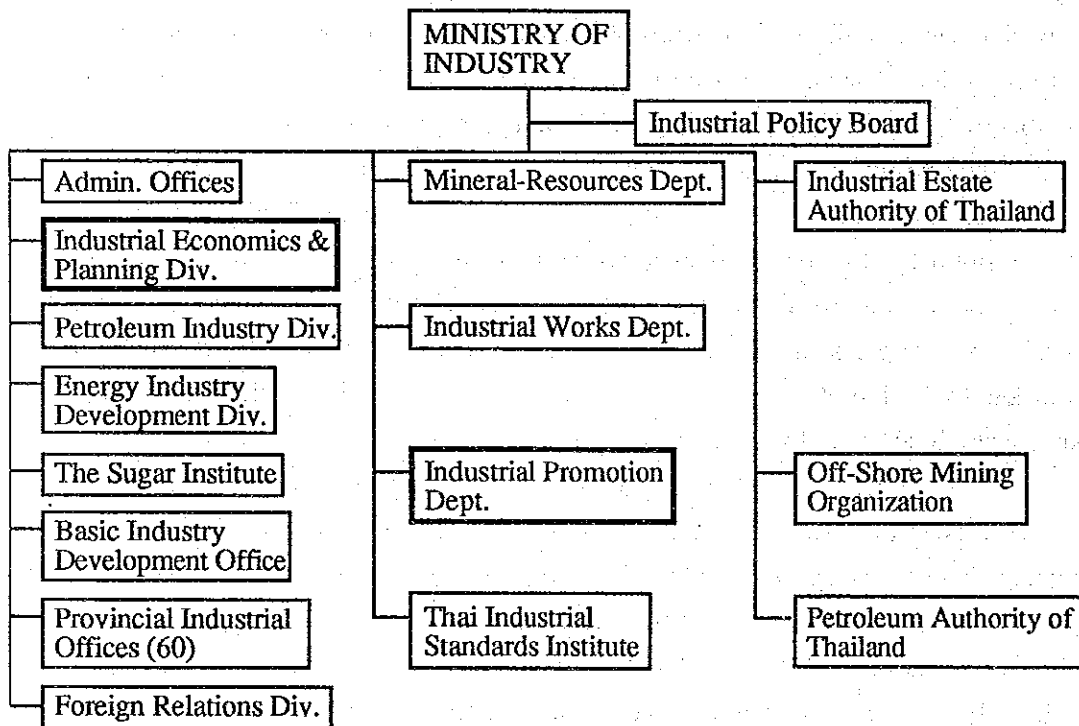
A good example of the industrial policies taken up by the IEPD relating to the 3 strategic sectors of the sixth 5-year plan is the policy of conversion to domestic production of automobiles and auto parts, which falls under the category of the engineering sector. This policy was taken up by the Automobile Development Committee (ADC), comprised of the Ministry of Industry, BOI, and other related government agencies, after the expiration of investment incentives handled by the BOI. It was not a new plan based on the sixth development plan. However, it stands as an important policy for promotion of the engineering industries as it meets the guidelines of the 3 strategic sectors, i.e., use of domestic raw materials and labor intensiveness.

The policy, like the investment incentives of BOI, is heavily protective of the industries, calling for extension of preferential treatment to specific companies while promoting the industries. However, while the BOI has devised special measures for the promotion of supporting industries through measures such as the extension of incentives for indirect exports, the Ministry of Industry has not taken sufficient steps to help promote formation of a more advanced industrial structure, in which multi-level policies such as by industry or by scale of enterprises are required.

The central organization providing assistance to small- and medium-sized enterprises is the DIP. The DIP, however, concentrates on technical guidance and management guidance to individual firms and is behind in organization and policymaking for comprehensive promotion of related industries. A look at the mold and die industry shows that molds and dies are handled just as part of the activities of MIDI, which is primarily a research, education, and training institute. There is no section established specifically for the promotion of the mold and die industry. For toys too, there are various sections and staff handling the toy products according to whether they are made of plastic, fabric, wood, or other materials, but there are no comprehensive programs laying stress on technical or design guidance and no system for promotion of the toy industry as whole.

The IEPD is not taking any specific steps, for the promotion of small and medium enterprises and regional industries, but is leaving matters to the DIP. The division of work in the Ministry of Industry is not necessarily clear, but one may say that the main task of the DIP inherently is considered to perform the promotion of small- and medium-sized enterprises and regional industries, so the drafting and execution of policies above the old level of provision of technical and business guidance to cottage industries and small- and medium-sized enterprises may be said to be expected as one of its roles.

Chart I-2-1. Organization Chart of Ministry of Industry



**Table I-2-1. Breakdown of Budget by Function**

(Unit: Million Baht, %)

	FY1987		FY1988	
	Budget	% prev. year	Budget	% prev. year
Agriculture	16,504.0	Δ1.8	18,128.5	9.8
Mining and Industry	687.0	Δ4.9	708.3	3.1
Transportation and Communications	10,373.6	Δ1.4	12,261.4	18.2
Commerce and Tourism	989.5	26.8	1,209.1	22.2
Science, Technology, Energy, Environment	810.6	Δ16.9	972.3	19.9
Education	42,772.0	4.3	45,376.4	6.1
Health and Sanitation	10,051.0	3.0	10,934.7	8.8
Social Services	8,478.1	19.6	9,008.8	6.3
National Defense	44,878.2	0.6	47,045.8	4.8
Domestic Security	9,086.1	3.2	9,838.6	8.3
Administrative Services	25,272.6	6.5	28,270.3	11.9
Debt Service	56,097.2	19.8	59,746.6	6.5
Provisional Investment Budget	1,500.0	—	0	—
<b>TOTAL</b>	<b>227,500.0</b>	<b>7.5</b>	<b>243,500.0</b>	<b>7.0</b>

**Budget by Ministries**

(Unit: Million Baht, %)

	FY1987		FY1988	
	Budget	% prev. year	Budget	% prev. year
Central Fund	23,219.2	12.1	24,037.5	3.5
Prime Minister's Office	1,608.8	1.0	1,916.4	19.1
Ministry of Defense	39,155.5	1.0	41,150.3	5.1
Ministry of Finance	57,547.3	18.6	60,894.0	5.8
Ministry of Foreign Affairs	1,066.0	3.3	1,165.4	9.3
Ministry of Agricultural Cooperatives	15,762.5	Δ1.0	17,158.9	8.9
Ministry of Transportation and Communications	9,696.2	Δ1.3	11,532.3	18.9
Ministry of Commerce	605.1	10.6	705.3	16.6
Ministry of Home Affairs	22,310.1	3.1	23,908.8	7.2
Ministry of Justice	663.8	Δ0.4	704.6	6.1
Ministry of Science, Technology, and Energy	1,233.3	Δ6.6	1,543.6	25.2
Ministry of Education	35,629.6	4.5	37,660.5	5.7
Ministry of Health	9,525.1	2.7	10,323.6	8.4
Ministry of Industry	858.0	1.4	1,017.5	18.6
Ministry of Universities	5,426.4	2.6	5,926.4	9.2
Other Agencies	745.3	0.4	774.0	3.9
State-Run Enterprises	2,297.6	209.6	2,842.8	23.7
Other Revolving Funds	150.2	153.4	238.1	58.5
<b>TOTAL</b>	<b>227,500.0</b>	<b>7.5</b>	<b>243,500.0</b>	<b>7.0</b>

**Table I-2-2. The Authority and the Responsibilities of IEPD  
(Industrial Economic and Planning Division)**

- (i) To conduct studies and analysis on production, marketing, natural resources, labour force, movement of production price, future opportunities, and problems and recommendation for each type of industry.
- (ii) To prepare industrial economic situation reports and disseminate them to businessmen, industrial entrepreneurs, interested persons, working units, institutes, students and the public under the four main industry types as follows:
  - forestry-and-mineral-basis industry
  - agricultural-and-rubber-basis industry
  - basic chemical and chemical products industry
  - export-oriented industry
- (iii) To set up industrial policies concerning the establishment and expansion of the factories, as well as to recommend measures for the support and the protection of domestic industries.
- (iv) To map out development plans for basic industry, agro-industry, export-oriented industry, and the specific industries, along with targets, objectives, policies and measures for the implementation of the plans both for short and long term.
- (v) To control and take care of the following matters,
  - the application of automobile parts and equipment,
  - the approval for import duty rates,
  - the import of automobiles,
  - the approval for the establishment of automobile and motorcycle factories,
  - the production quota in ASEAN countries.
- (vi) To inspect and follow up implementations done by the private sector if they meet the objectives and conditions of the government policies.

Source: Annual Report of MOI, 1982

#### **2-1-4. Status of Fiscal and Financial Policies as Seen from Industrial Policies**

Policy management in the fields of government finances, taxes, and financing is an important means for improving the effectiveness of industrial policies. The status of fiscal and financial policies in Thailand is summarized below.

Thailand has a small fiscal budget and must allocate a significant portion of the same for debt servicing. It therefore does not have much flexibility in its expenditures and is limited in the degree to which it can execute business promotion programs. Starting from 1982, a budget for special programs was incorporated into the fiscal system, thus allowing more flexible expenditures for such programs, but due to the situation described above, not much has been accomplished.

A look at the fiscal policies shows that due to the promotion of industrialization through the private sector since the 1960s, the fiscal authorities have concentrated on stabilization of commodity prices, the exchange rate, and the international balance of payments in their policies. Behind this is the strong aversion in industry to government guidance and intervention and the inability of the fiscal authorities to exert leadership. As a result, funds for industrialization were procured through foreign investment, commercial financing, and trade financing, while there was not much financing provided by the government. (Please refer to "Credit by Financial Institutions", Chapter 2-4-1.)

However, since the devaluation of the baht in November 1984, the fiscal authorities have strengthened their leadership through means such as the amendment of the Bank Law and the Finance Company Law in January 1986 to enable dismissal of managers for improper loans, a string of other financial laws, etc. Since the infrastructures of capital markets like the stock market are improving, the role of fiscal policies in the promotion of industry is expected to grow even further.

Next, a look at the budget of the regional governments, which should act as the centers for regional industrial promotion, shows that almost all the regional governments depend on allocations from the central government. The regional governments have no leeway at all for their own incentives.

Table I-2-3. National Government Actual Expenditures by Major Economic and Functional Classification<sup>1</sup>

	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total expenditures <sup>2</sup>	77,509	89,456	120,973	133,444	157,017	167,088	182,228	200,028	204,279
Economic classification:									
Current	58,518	70,166	94,370	105,259	125,904	137,355	154,481	166,937	173,557
Capital	18,991	19,290	26,603	28,185	31,113	29,733	27,747	33,091	30,722
Major functional classification:									
Economic services	17,012	17,093	22,804	26,218	27,902	27,969	28,573	30,534	29,928
Social services	23,831	27,703	36,474	37,586	47,940	50,524	55,419	58,949	60,156
Defence	15,310	17,336	24,398	25,917	31,350	31,685	39,034	43,184	41,125
General administration & services	9,526	12,429	17,705	19,424	18,134	24,556	24,304	25,765	25,761
Unallocable items	11,830	14,895	20,592	24,299	31,691	32,354	37,898	41,596	47,309

Note: 1. Representing only actual expenditures as appropriated in the National Government Budget and excluding those financed by external loans and grants.

2. The original amounts have been adjusted to take into account of time-leg items.

Source: Quarterly Report of Central Bank, June '87



Table I-2-4. National Government Finance<sup>1</sup>

	1981	1982	1983	1984	1985	1986P
Revenue(+)	111,963.0	116,057.7	143,634.7	148,078.5	160,569.7	169,834.3
Expenditures(-)	133,322.6	157,177.7	166,459.0	181,261.7	199,547.5	203,984.3
Treasury deficit(-) or surplus(+)	-21,359.6	-41,120.0	-22,824.3	-33,183.2	-38,977.8	-34,150.0
Financing:						
Net domestic borrowings(+)	22,106.0	43,544.9	25,374.8	35,968.9	31,588.4	50,248.8
Bank of Thailand <sup>2</sup>	13,463.6	16,511.0	9,767.1	-3,283.7	11,325.9	-5,928.4
Commercial banks	6,384.1	13,700.3	3,460.4	23,429.0	700.6	24,818.2
Government Savings Bank	1,687.0	5,018.0	6,350.3	8,934.0	8,358.5	23,553.1
Others	571.3	8,315.6	5,797.0	6,789.6	11,203.4	7,805.9
Net foreign borrowings <sup>3</sup> (+)	-1,023.4	779.4	927.9	-715.3	14,189.9	-6,451.5
Net other liabilities of Treasury	130.7	-2665.5	-3898.9	-2351.7	-6107.3	-7969.6
Use of Treasury cash balances(+)	146.3	-538.8	420.5	381.3	-693.2	-1677.7

Note: 1. Beginning with the November 1971 issue, transactions on the non-budgetary accounts are reclassified on a net basis into Revenue, Expenditures and Net other Liabilities of Treasury wherever appropriate.

2. Including Exchange Equalization Funds.

3. Representing small part of total foreign borrowings of the government.

Source: Quarterly Report of Central Bank, June '87

### **2-1-5. Industrial Organizations**

Industrial organizations generally start out as forums for friendly exchanges of information on management and technology among businessmen. However, as the number of members grows and the organizations gain a greater voice in the industry, they come to function as representatives of the industries, serving as channels of information with respect to the related industries, government, and consumers, and function as PR organizations as well. When the government drafts and manages industrial policies, it would be desirable to obtain a grasp of the status of the related industries and their wishes and to secure a consensus so as to facilitate execution of the policies. The industrial organizations can function as places for gathering such consensus.

There are some 200 industrial organizations registered with the Ministry of Commerce of Thailand under the Trade Association Act. The principal ones in the industrial field, including the financial and service sectors, are the Thailand Chamber of Commerce, Board of Trade, Thai Bankers Association, JSCC (Joint Standing Consultative Committee), CIB (Commerce, Industry Bank), and FTI (Federation of Thai Industries).

The Board of Trade, JSCC, and CIB are comprised partially of large companies, while the TCC has large numbers of members, primarily in commerce, and the FTI is comprised mainly of manufacturers. The FTI (old name, ATI, or the Association of Thai Industries) is comprised of members in the manufacturing field and quasi-members in other fields. As of February 1988, it had about 1,800 member firms. The FTI has branches in 6 locations serving as subcommittees and has clubs organized for each industry, numbering 24 as of February 1988. There are problems, such as the fact that the Association of Textile Entrepreneurs, which plays an important part in the Thai industrial world, is not a member of the FTI, but in 1987, 2 new clubs had been established and the Association of Toy Manufacturers, representing the newly rising toy industry, was considering joining. Thus the FTI's voice in the industrial world is gradually growing. Its relations with the government, as a channel for industry, are also growing stronger.

### **2-1-6. Problems in Industrial Promotion Policies**

#### **Investment Incentive Policies**

At the heart of the industrial promotion policy in Thailand are the incentive policies of BOI. It is an undisputed fact that these investment incentives have contributed greatly

to Thailand's industrialization. However, the Investment Promotion Act limits competition in that it limits the number of companies which could take special tax privileges, etc., in each industry and further tends to give priority to large corporations, because it uses the capital, investment value, and number of employees as the basic standard for selection. Therefore, the incentives cannot be easily used by existing small- and medium-sized enterprises, which account for the major portion of the industrial world, and the incentives do not work effectively to promote a broad-based industrial layer including parts industries, etc. For this reason, there are still large quantities of parts and intermediate goods being imported in industrial fields which have shown steady development and produce final products such as home electrical appliances and automobiles.

In recent years, stress has been placed on promotion of engineering industries and small- and medium-sized enterprises as well. Under the present Investment Promotion Law, the case of investment for expansion of facilities by existing companies is applicable, and the minimum investment has been lowered from 5 to 1 million baht when the companies are export-oriented. Incentives are also recognized for indirect exports in the sector of supporting industries such as the mold and die (in a broad sense, this includes parts for goods for export and also molds and dies delivered to export manufacturers). However, in both cases, there is still the condition of a tie-in with exports. According to related agencies, in the actual selection of companies for incentives too, priority is considered to be given to large-sized investments due to the limited staff of the BOI and investment efficiency. For the numerous small- and medium-sized enterprises not oriented toward exports, the tax benefits under the Investment Promotion Act are irrelevant.

Further, in promotion of the mold and die and other supporting industries, which which constitute a thin industrial layer, the government is trying to attract companies from abroad through the Investment Promotion Act so as to improve the industries. This is, however, causing problems such as criticism of unfair competition from the existing domestic industries, which do not enjoy any preferential treatment for improvement of the industrial structure.

#### Industrial Promotion Policies

1. The industrial policies of Thailand have been based primarily on the investment incentives of BOI, so the Ministry of Industry, the other main organization for executing industrial policy, has stressed the function of factory management and technical guidance. Therefore, despite the sudden expansion of industrial fields growing along with the

progress in the industrialization or of those areas to be promoted in the future, the departments of MOI and IEPD, in charge of drafting and executing policies for promotion, are not organized to deal comprehensively with industrial problems and thus are slow in response. Tax incentives, a powerful tool, are limited to companies selected for encouragement in select industries due to fears of loss of tax revenues, etc., resulting in unfair treatment of companies in the same industry.

2. Industrial organizations, a powerful medium for drafting and executing industrial promotion policies, are limited in organizational ability and functions due to the low awareness of the advantages to be gained from organization, the lack of incentives from the government, etc. While industrial organizations are being formed gradually, primarily through the auspices of the FTI, no striking improvement is expected under the current conditions.

## **2-2. Promotion of Small- and Medium-Sized Industries**

### **2-2-1. General**

Thailand is using foreign investment to achieve steady industrialization and has achieved particularly striking economic development in metropolitan areas. On the other hand, the concentration of industry around metropolitan areas has led to a wider gap in income levels between the metropolitan areas and other regions. Moreover, there are limits to the quantity of labor that can be absorbed by the rural regions, which account for 70% of the population. This invites increased unemployment and an influx of population to the cities, thus causing overcrowding and other urban problems. Looking at the industrialization in more detail, positive promotion of foreign investment has helped enable domestic production of final industrial products such as textiles, home electrical appliances, and transport machinery, by large-sized corporations or foreign-capital affiliates, but there has been a considerable delay in the establishment of the parts industries and related industries for supporting these products. Thus, this sector still depends on imports.

In these past few years, there has been a surge export-oriented investment, but the lack of supporting industries restricts activities of the export industries and invites greater trade deficits through a rapid rise in imports of parts and materials.

A look at the metal and machinery industries (basic ferrous metal products, nonferrous metal products, metal products, general machinery, electrical machinery, transport machinery, precision machinery, and auto repair) by factory statistics shows cottage industries and small industries accounting for 96% of the total, with medium-sized industries accounting for only 3%. This shows the thin strata of medium-sized industries, which play a large role as subcontractors and supporting industries. (Note)

In the current sixth 5-Year Plan, the stress in the industrial promotion policies is on (1) promotion of small- and medium-sized industries and regional industries, (2) promotion of export industries, and (3) promotion of engineering and agro-industries. The hope is that the small- and medium-sized industries will absorb labor, contribute to regional development, contribute to exports by industries using domestic raw materials, and serve as subcontractors and supporting industries for supplying parts. Development of multiple levels of industry is essential for raising the level of industry.

In the sixth 5-Year Plan, emphasis has been placed on the agro-industry, metalworking, export-oriented, regional, and medium- and small- scale industries in view of the need for industries which are labor-intensive, use regional resources, simple technology, and eliminate poverty in the regional areas.

## Classification of Small- and Medium-Sized Industries

In Thailand, there is no clear legal distinction made between large-sized industries and small- and medium-sized industries. The various administrative organizations which deal with small and medium industries, for convenience in work, classify small- and medium-sized industries based on the standards of fixed assets, sales, or number of employees.

The Ministry of Industry set standards for classifying medium- and small-sized industries by an ordinance in 1987, as follows:

- Cottage industries: Those with less than 10 employees or not more than 1 million baht in fixed assets
- Small-sized industries: Those with from 10 to 49 employees or from 1 million up to not more than 10 million baht in fixed assets
- Medium-sized industries: Those with 50 to 199 employees or from 10 million up to not more than 50 million baht in fixed assets
- Large-sized industries: Those with 200 or more employees or over 50 million baht in fixed assets.

The government financial institutions, such as the Bank of Thailand, the Industrial Finance Corporation of Thailand (IFCT), and the Small Industry Finance Office (SIFO) of the Ministry of Industry classify industries as follows by the standard of loans:

- Small-sized industries: Not more than 10 million baht in fixed assets
- Medium-sized industries: Over 10 million baht to not more than 50 million baht in fixed assets
- Large-sized industries: Over 50 million baht in fixed assets.

A look at the industrial structure by size from the number of factories (Note) registered at the Department of Industrial Works of the Ministry of Industry shows that of the 39,626 registered factories as of the end of 1984 (excluding rice-mill factories), which had a total of about 905,000 employees and an investment capital of 181,660 million baht, small- and medium-sized industries accounted for 38,985 factories, or 98%. A breakdown of the small- and medium-sized industries shows 64% were cottage industries, 29% small-sized industries, and 5% medium-sized industries. The small- and medium-sized industries accounted for 532,000 workers, or 59% of the total.

Notes: The Department of Industrial Works of the Ministry of Industry registers factories which employ 7 or more workers or which use a motor of 2 hp or greater power. The latest data classified by industry as of the date of this study was for the end of 1984.

A factory is counted as one industry on a factory-base estimation.

According to the Industrial Statistics Table by MITI of Japan, in 1986 the number of establishments with less than 20 employees accounted for 76.6% of the total, and those with 20 to 299 for 22.5%.

**Table I-2-5. Number of Factories by Industry Types  
and by Employment Size (1984)**

Industry types	Cottage (-9)	SSIs (10-49)	MSIs		SMIs Total	LSIs (200-)	Total
			50-99	100-199			
Consumer products	8,189	4,615	459	254	13,517	261	13,778
Food	5,270	2,382	200	110	7,962	114	8,076
Beverage	78	62	9	24	173	19	192
Tabacco	64	173	36	22	295	36	331
Wearing apparel	210	988	138	67	1,403	55	1,458
Leather & products	161	97	7	6	271	7	278
Footwear	107	94	6	4	211	9	220
Furniture	695	399	39	9	1,142	9	1,151
Printing & publishing	1,604	420	24	12	2,062	12	2,072
Intermediate products	4,970	3,670	607	296	9,543	250	9,793
Textiles	342	693	121	80	1,236	119	1,355
Wood & products	1,774	1,017	184	59	3,034	19	3,053
Paper & products	279	118	23	16	436	16	452
Chemical & products	393	414	80	36	923	25	948
Petroleum & product	10	9	5	1	25	4	29
Rubber & products	401	249	50	40	740	25	765
Plastic products	930	462	35	18	1,445	9	1,454
Ceramics	58	129	30	10	227	10	237
Glass & products	4	22	9	4	39	6	45
Non-metal mineral	779	557	70	32	1,438	17	1,455
Capital products	10,299	2,660	282	140	13,361	116	13,477
Basic metal	29	93	26	18	166	9	175
Non-ferrous metal	194	102	7	5	308	4	312
Metal products	3,651	915	80	40	4,686	30	4,716
General machinery	4,206	776	58	17	5,057	9	5,066
Electric machinery	524	283	49	26	882	23	905
Transport machinery	1,644	463	58	31	2,196	37	2,233
Scientific equipment	31	28	4	3	66	4	70
Over type products	1,904	587	56	17	2,564	14	2,578
Total	25,342	11,532	1,404	707	38,785	641	39,626

Note: 1. Exclude rice mill factories  
2. Automobile repair shops (2,182 factories) are grouped in other type products

Source: IWD/MOI



Table I-2-6. Number of Registered Manufacturing Factories by Employment Size (1984)

Size	Whole Nation	Total	Bangkok	Urban		Total	Rural		Total	North	South
				Urban	Central		Central	East			
- 9	25,342	13,854	12,188	1,666	1,923	11,488	2,576	1,961	3,356	1,672	
10 - 19	7,250	4,419	3,754	665	457	2,831	455	606	937	396	
20 - 29	2,308	1,520	1,180	340	95	788	108	211	231	143	
30 - 49	1,974	1,389	999	390	55	585	102	181	133	114	
50 - 69	826	539	338	201	27	287	56	89	68	47	
70 - 99	578	393	238	155	20	185	40	50	49	26	
100 - 129	357	233	111	122	17	124	15	28	41	23	
130 - 149	127	89	34	55	4	38	10	13	6	5	
150 - 169	129	89	40	49	5	40	4	7	14	10	
170 - 199	94	75	33	42	2	19	5	5	4	3	
200 - 229	121	82	36	46	8	39	1	18	8	4	
230 - 249	45	33	15	18	3	12	2	4	1	2	
250 - 269	46	32	10	22	3	14	0	6	0	5	
270 - 299	42	33	15	18	0	9	4	0	2	3	
300 -	387	284	119	165	10	103	40	24	23	6	
<b>TOTAL</b>	<b>39,626</b>	<b>23,064</b>	<b>19,110</b>	<b>3,954</b>	<b>2,609</b>	<b>16,562</b>	<b>3,418</b>	<b>3,203</b>	<b>4,873</b>	<b>2,459</b>	

Source: The Department of Industrial Works (IWD), Ministry of Industry (MOI)

**Table I-2-7. Number of Registered Factories  
by Employment Size and Industry  
(Whole Nation)  
(1984)**

Size Industry Type	-9	10- 19	20- 29	30- 49	50- 99	100- 149	150- 199	200- 299	300-	TOTAL
Food	5,270	1,664	431	287	200	76	34	43	71	8,076
Beverage	78	45	5	12	9	18	6	10	9	192
Tobacco	64	70	51	52	36	15	7	19	17	331
Garment	552	821	404	456	259	109	38	44	130	2,813
Leather	161	47	24	26	7	4	2	4	3	278
Footwear	107	74	10	10	6	4	0	2	7	220
Wood	1,774	584	209	224	184	42	17	12	7	3,053
Furniture	695	280	68	51	39	3	6	5	4	1,151
Paper	279	72	24	22	23	11	5	8	8	452
Printing	1,604	293	75	52	24	7	5	5	7	2,072
Ind.-Chemical	46	31	19	14	16	4	1	4	6	141
Chemical-Prod.	347	183	84	83	64	20	11	7	8	807
Petro.-Rfine	0	0	0	0	0	0	1	1	2	4
Petro.-Prod.	10	2	4	3	5	0	0	1	0	25
Rubber	401	136	53	60	50	26	14	12	13	765
Plastic	930	311	75	76	35	14	4	6	3	1,454
Pottery	58	57	39	33	30	5	5	4	6	237
Glass-Prod.	4	7	5	10	9	3	1	0	6	45
Clay-Prod.	779	398	98	61	70	22	10	9	8	1,455
Ferrous-Mtl.	29	38	31	24	26	9	9	2	7	175
Non-Ferrous	194	68	20	14	7	4	1	2	2	312
Metal-Prod.	3,651	617	179	119	80	25	15	10	20	4,716
Machinery	4,206	546	149	81	58	14	3	4	5	5,066
Electro-M/C	524	162	64	57	49	19	7	12	11	905
Vehicle	1,644	300	85	78	58	19	12	15	22	2,233
(Auto. Repair)	1,747	293	58	36	36	3	1	5	2	2,181
Scientific	31	19	6	3	4	2	1	2	2	70
Other Mfg.	157	132	38	30	20	6	7	6	1	397
Mfg. Total	25,342	7,250	2,308	1,974	1,404	484	223	254	387	39,626
Other Ind.	680	236	93	61	54	9	13	6	6	1,158
<b>TOTAL</b>	<b>26,022</b>	<b>7,486</b>	<b>2,401</b>	<b>2,035</b>	<b>1,458</b>	<b>493</b>	<b>236</b>	<b>260</b>	<b>393</b>	<b>40,784</b>

Source: IWD/MOI

**Table I-2-8. Number of Registered Factories  
by Employment Size and Industry  
(Urban)  
(1984)**

Size Industry Type	-9	10- 19	20- 29	30- 49	50- 99	100- 149	150- 199	200- 299	300-	TOTAL
Food	996	324	117	103	71	25	17	25	26	1,704
Beverage	27	17	5	6	2	4	2	7	8	78
Tobacco	1	1	2	1	1	0	0	0	2	8
Garment	512	792	386	428	231	100	35	44	111	2,637
Leather	159	46	24	26	7	4	2	4	3	275
Footwear	103	73	10	10	6	4	0	1	6	213
Wood	898	245	90	81	46	8	9	6	6	1,389
Furniture	428	169	46	36	29	2	4	1	2	707
Paper	271	67	21	21	23	8	5	7	6	429
Printing	1,336	272	71	51	22	7	5	5	6	1,775
Ind.-Chemical	36	25	17	11	15	4	1	3	6	118
Chemical-Prod.	283	167	78	73	60	16	8	6	8	699
Petro.-Rfine	0	0	0	0	0	0	0	0	1	1
Petro.-Prod.	9	2	3	3	4	0	0	0	0	22
Rubber	166	103	32	39	23	12	5	4	10	394
Plastic	909	297	71	76	35	13	4	6	3	1,414
Pottery	15	13	9	1	4	1	5	3	4	55
Glass-Prod.	3	7	5	10	9	3	1	0	6	44
Clay-Prod.	109	92	25	30	40	15	6	4	4	325
Ferrous-Mtl.	22	32	28	24	25	9	9	2	6	157
Non-Ferrous	182	64	17	11	5	4	1	1	2	287
Metal-Prod.	3,153	575	171	112	77	25	15	9	20	4,157
Machinery	1,842	341	94	64	48	12	3	3	4	2,411
Electro-M/C	421	160	62	57	48	18	6	11	11	794
Vehicle (Auto. Repair)	1,002 799	204 202	56 43	59 27	45 33	17 3	12 1	14 5	19 1	1,428 1,114
Scientific	30	19	6	3	4	2	1	2	2	69
Other Mfg.	142	122	31	26	19	6	7	6	1	360
Mfg. Total	13,854	4,419	1,520	1,389	932	322	164	180	284	23,064
Other Ind.	229	73	39	25	25	4	6	2	5	408
<b>TOTAL</b>	<b>14,083</b>	<b>4,492</b>	<b>1,559</b>	<b>1,414</b>	<b>957</b>	<b>326</b>	<b>170</b>	<b>182</b>	<b>289</b>	<b>23,472</b>

Source: IWD/MOI

**Table I-2-9. Number of Registered Factories  
by Employment Size and Industry  
(Bangkok)  
(1984)**

Industry Type	Size -9	10- 19	20- 29	30- 49	50- 99	100- 149	150- 199	200- 299	300-	TOTAL
Food	767	217	64	66	28	4	6	5	6	1,163
Beverage	24	13	3	4	2	2	0	2	6	56
Tobacco	1	1	2	0	1	0	0	0	2	7
Garment	479	713	317	336	169	58	16	21	43	2,152
Leather	50	35	15	17	4	1	2	2	1	127
Footwear	98	70	9	10	4	2	0	1	3	197
Wood	638	183	66	45	25	4	4	6	4	975
Furniture	385	136	40	28	23	1	1	1	1	616
Paper	259	63	15	12	15	4	3	3	0	374
Printing	1,306	269	68	49	20	7	5	5	6	1,735
Ind.-Chemical	17	12	9	4	2	1	0	1	1	47
Chemical-Prod.	234	130	62	56	43	8	6	5	7	551
Petro.-Rfine	0	0	0	0	0	0	0	0	1	1
Petro.-Prod.	8	1	2	3	1	0	0	0	0	15
Rubber	146	82	22	20	15	4	3	2	1	295
Plastic	870	267	60	56	18	6	2	3	1	1,283
Pottery	5	3	3	0	1	0	1	0	0	13
Glass-Prod.	3	5	4	7	7	1	1	0	2	30
Clay-Prod.	75	59	17	19	20	2	3	1	3	199
Ferrous-Mtl.	15	20	20	6	7	0	0	0	1	69
Non-Ferrous	151	55	8	6	1	0	0	0	0	221
Metal-Prod.	3,000	500	137	72	35	11	7	6	11	3,779
Machinery	1,517	291	73	42	33	5	0	0	2	1,963
Electro-M/C	401	145	52	42	31	11	1	3	4	690
Vehicle	890	162	41	46	25	6	5	3	10	1,188
(Auto. Repair)	687	193	43	26	32	2	1	3	1	988
Scientific	29	17	5	2	1	0	1	0	1	56
Other Mfg.	133	112	23	25	13	5	5	3	1	320
Mfg. Total	12,188	3,754	1,180	999	576	145	73	76	119	19,110
Other Ind.	138	54	28	12	8	1	2	1	1	245
TOTAL	12,326	3,808	1,208	1,011	584	146	75	77	120	19,355

Source: IWD/MOI

## **2-2-2. Department of Industrial Promotion**

The government's current small- and medium-sized industry promotion policy calls for improvement of financing, improvement of facilities and technology, modernization of management, marketing, elimination of pollution, promotion of domestic material use, and improvement of added value.

The specific proposals for and implementation of this policy are handled in cooperation with the Ministry of Finance, BOI, NESDB, the Ministry of Industry, and other related agencies, but for policy implementation, the Department of Industry Promotion (DIP) of the Ministry of Industry is expected to play the central role.

While the DIP serves as the coordinator for the promotion of small- and medium-sized industries, it was originally organized with an emphasis on cottage industries and for providing guidance on handicraft skills. In addition to this old guidance for cottage industries, the DIP now provides assistance in technology, production control, management of finances, marketing, financing, etc. to the small- and medium-sized industries, which will play an important role in Thailand's modernized industrial structure. These activities are handled by the sections indicated in the attached tables. The main activities are as follows.

Note that financing for the small- and medium-sized industries is handled under schemes of the Small Industry Finance Office (SIFO) of the Ministry of Industry, the Industrial Finance Corporation of Thailand (IFCT), and the Bank of Thailand. A summary of this financing and problems therein are explained below:

## **Guidance on Facilities and Technology**

The Industry Service Section, previously named Industry Service Institute and thus referred to as the ISI in the DIP, has offices in Bangkok and 3 regional areas and offers guidance, consultations, and seminars on manufacturing skills, packaging, and design to small-sized industries and cottage industries of the local industry level. The training courses provide training in skills up to the cottage industry level, such as woodcarving, but the ISI is also engaged in research and development for improving the materials, quality, and production technology of plastic and wood furniture, ceramics, textiles, and agro-industries in its Bangkok office. The center has in a sense become the main organization for design development and improvement based on materials.

The central section is the Design Promotion Section, which not only improves and develops designs, but depending on the project, will also help by providing guidance in marketing and other areas.

Starting in 1988, the ISI will not only be engaged in its traditional materials-oriented projects, but also in improvement of designs for specific industries. In the first fiscal year of this new setup, it is scheduled to hold a design contest for toys.

Further, an ISU (Information Service Unit) project has recently been started by the USAID, an American aid organization, to promote industrial development in the regional areas. The ISI is serving as the implementing organization for the project. The project uses 3 regional offices of the ISI (Chiang Mai, Khon Kaen, and Song Khla) and provides marketing, technological, and general industrial information to regional enterprises. There are also plans for the establishment of a library in the ISI. The regional offices are scheduled to offer circuit-consultations by industrial experts, workshops, and seminars. The industries covered are agro-processing, lumber and furniture, building materials, machinery and metalworking, ceramics, silk, and rubber products.

In addition to DIP activities, there are other organizations for providing technical consultations in response to requests from small- and medium-sized industries, such as the Center of Operation for Research and Development (CORD) established under the King Mongkut's Institute of Technology. Guidance for workers is handled by ISI and the National Institute for Skill Development (NISD) of the Department of Labor of the Ministry of Internal Affairs. The National Institute for Skill Development has training centers in Bangkok and 7 regional areas. The training is broad in range, covering simple working skills to medium-level skills.

## Management Guidance

Management guidance is being handled by the Thailand Management Development and Productivity Center (TMDPC) of the Industrial Productivity Division (IPD) of the DIP. This center offers seminars and training on marketing, production control, management of finances, computers, etc. and offers consultation services. The center functions as Thailand's representative in the Asian Productivity Organization (APO) and engages in related projects. Previously, the center also offered training in trade, but this was taken over by the Trade Training Center (TTC), the export promotion department of the Ministry of Commerce, after the establishment of the TTC.

Due in part to positive seminars on development of human resources and pamphlet campaigns, the TMDPC courses are almost completely filled, but the small size of the facilities and other factors make it difficult for the project to be expanded any further at the present time. There is a library on production control, marketing, etc., but it only has a limited collection of approximately 1,400 books and 3,000 magazines.

In addition, the Thai Handicrafts Promotion Division, Cottage Industry Division, Textile Industry Division, and Industrial Development Center (IDC), sections of the DIP, provide technical information, engage in experimental research and development, provide technical guidance, and provide management guidance in accordance with their respective activities. However, the emphasis here is less on guidance in marketing than on guidance in technology.

The Planning Division controls the various sections, including the SIFO, centers, and regional offices and formulates the general programs for promotion of small- and medium-sized industries.

### **2-2-3. Problems in Promotion of Small- and Medium-Sized Industries**

1. The central organization providing assistance to small- and medium-sized enterprises is the DIP. The DIP, however, concentrates on technical guidance and management guidance to individual firms and is behind in organization and policymaking for comprehensive promotion of related industries. A look at the mold and die industry shows that molds and dies are handled just as part of the activities of MIDI, which is primarily a research, education, and training institute. There is no section established specifically for the promotion of the mold and die industry. For toys too, there are various sections and staff handling the toy products according to whether they are made of plastic, fabric, wood, or other materials, but there are no programs which stress technical or design guidance and no system for promotion of the toy industry as whole.

For this reason, in view of its problems in coordinating with related agencies, it is difficult to say that its expert proposals on the promotion of the mold and die industry and other individual proposals are put to full use.

It is necessary to clarify the sections in charge of the industries emphasized for promotion and to carry out promotion of industry as a whole on a comprehensive basis.

2. The DIP has established the IDC and MIDI and is using the ISU and strengthening other functions, but the expansion of its organization has been accompanied by a loss of smooth contact between sections, an overlap of duties, unclearness of final responsibility, and other problems. To clarify the mutual duties and responsibilities and to raise the general efficiency of policy implementation, it would be desirable to establish an exchange of personnel among the various sections so as to stimulate activities further.



Chart I-2-2. Organization Chart of DIP

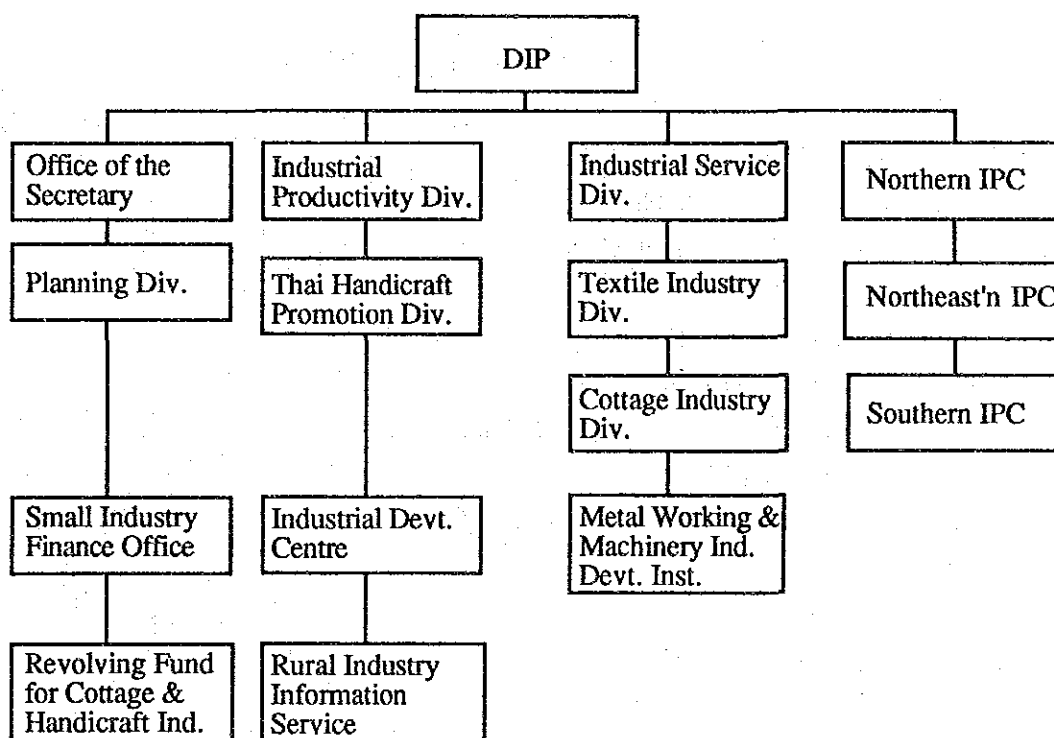


Table I-2-10. Training by NISD  
Statistics of Skill Development in 1986

Institute for Skill Development	Total		Pre-employment Training		Up-Grading Training		On The Job Training		Non-technical Training	
	Enrol- ment	Grad- uate	Enrol- ment	Grad- uate	Enrol- ment	Grad- uate	Enrol- ment	Grad- uate	Enrol- ment	Grad- uate
Total	22,113	16,794	5,722	3,424	7,896	5,655	3,889	2,435	5,486	5,288
Bangkok Metropolis	8,859	5,767	1,986	1,268	3,285	2,825	793	567	1,995	1,987
Ratchaburi	2,232	1,674	678	396	853	635	446	388	255	255
Chonburi	2,563	1,935	632	339	1,829	796	321	263	581	537
Lampang	1,916	1,538	688	378	631	555	388	311	297	294
Khon Khan	2,628	2,857	825	484	739	547	481	448	583	578
Song Khla	1,855	1,429	498	299	475	347	316	232	566	551
Nakhon Sawan	2,868	2,394	495	268	884	758	272	226	1,289	1,158

Source: Labour studies and planing division, Department of labour  
Yearbook of Labor Statistics '86

**Table I-2-11. TMDPC Training Programmes 1988**

**COURSE TITLE**

**GENERAL MANAGEMENT**

PRINCIPLES OF MANAGEMENT  
MANAGEMENT TECHNIQUES  
ORGANIZATION & METHODS  
BUSINESS RESEARCH  
PARTICIPATIVE MANAGEMENT  
TRANSACTIONAL ANALYSIS TECHNIQUE  
OCC MANAGEMENT  
MANAGEMENT BY OCC IN PRACTICE

**OFFICE MANAGEMENT**

OFFICE MANAGEMENT  
OFFICE WORK SIMPLIFICATION  
SECRETARIAL SYSTEM  
ADMINISTRATIVE OFFICE PROCEDURE AND PRACTICE  
EFFECTIVE FILING AND RECORDS MANAGEMENT  
OFFICE SECURITY MANAGEMENT  
EFFECTIVE RECEPTION

**COMPUTER FOR MANAGEMENT**

OFFICE AUTOMATION  
FEASIBILITY STUDY ON COMPUTER APPLICATIONS  
EDP MANAGEMENT  
BUSINESS MANAGEMENT TECHNIQUE THROUGH COMPUTER  
BUSINESS SYSTEM ANALYSIS AND DESIGN  
DATA BASE MANAGEMENT SYSTEM

**FINANCIAL AND ACCOUNTING MANAGEMENT**

INVENTORY CONTROL  
ACCOUNTING FOR NON-ACCOUNTING EXECUTIVES  
COST REDUCTION IN INDUSTRIAL ENTERPRISES  
WORKING CAPITAL MANAGEMENT  
PLANNING & CONTROL BY BUDGET FOR INDUSTRIAL ENTERPRISES

**PROJECT MANAGEMENT**

**PROJECT FEASIBILITY STUDY FOR TRADING AND INDUSTRIAL  
ENTERPRISES**

**PROJECT MANAGEMENT**

**INDUSTRIAL PROJECT IDENTIFICATION**

**PERSONNEL MANAGEMENT**

**JOB INSTRUCTION**

**JOB RELATIONS**

**SUPERVISION TECHNIQUES IN INDUSTRIAL OPERATION**

**DEVELOPING YOUR SUPERVISION**

**PERSONNEL ADMINISTRATION FOR FIRSTLINE SUPERVISORS**

**TRAINING MANAGEMENT**

**HUMAN RESOURCES MANAGEMENT**

**MARKETING MANAGEMENT**

**SALES SUPERVISION**

**SALES MANAGEMENT**

**MARKETING FOR SALES PERSONNEL**

**SALESMANSHIP**

**ADVERTISING AND SALES PROMOTION**

**RETAIL SALES AND SERVICES**

**INDUSTRIAL ENGINEERING**

**QUALITY CONTROL FOR SUPERVISORS**

**PRODUCTION PLANNING AND CONTROL**

**JOB SAFETY**

**JOB METHOD**

**ENERGY MANAGEMENT IN INDUSTRY**

**MAINTENANCE MANAGEMENT**

**STATISTICAL QUALITY CONTROL**

#### **2-2-4. Organization of Information and Materials**

To improve production technology and strengthen marketing capabilities, it is essential to obtain a grasp of new products, industries, and market trends in both the domestic and overseas markets. The small- and medium-sized enterprises are weak in information-gathering capability, and thus, for them, use of information and materials collected by public organizations has great meaning. The DIP (Dept. of Industrial Promotion), which is striving to promote exports, is in the process of organizing such materials, primarily information related to overseas marketing, and exceeds the various reference libraries of the DIP's sections of the Ministry of Industry in terms of the volume of materials and information available. However, looking at the materials on Japan, which may be considered an important market, there are only a few directories and trade statistics on hand, not enough to enable one to obtain a grasp of the dynamically changing Japanese economy and market. The same may be said for materials on other countries.

In the Ministry of Industry, the TMDPC, which is the technological and management training branch, collects information on business management, but most of the information is in English, and there are almost no English or Thai language industrial journals directed at small- and medium-sized businesses.

The IDC, which engages in corporate tie-ups and technical guidance, has established a reference library and is attempting to collect technical journals, but the absolute volume of information is insufficient.

To promote use of information by small and medium enterprises, it is essential to increase the amount of information and materials from abroad and also to establish more business and technical journals edited in the Thai language. In this respect, the Technological Promotion Association (TPA) and some other organizations have been translating materials into Thai, but the amount is insufficient for current needs.

It would be desirable for the government to promote tie-ups among its various organizations and sections within each organization to ensure a greater capacity to collect technical information, business information, marketing information, and other information leading to technological improvements and management in the Thai industrial world, and to engage in more positive PR to promote use of this information.