

INDUSTRIAL SECTOR DEVELOPMENT IN THE KINGDOM OF THAILAND: A STUDY

MOLD & DIE AND TOY INDUSTRIES

**SUMMARY OF
FIRST YEAR FINAL REPORT**

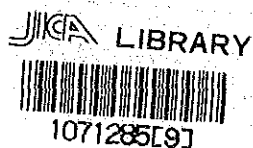
SEPTEMBER 1988

JAPAN INTERNATIONAL COOPERATION AGENCY

INDUSTRIAL SECTOR DEVELOPMENT IN THE KINGDOM OF THAILAND: A STUDY

MOLD & DIE AND TOY INDUSTRIES

ADDENDUM



18415

FIRST YEAR FINAL REPORT

SEPTEMBER 1988

JAPAN INTERNATIONAL COOPERATION AGENCY

国際協力事業団

18415

Contents of Summary

INTRODUCTION	1
BACKGROUND, OBJECTS AND METHOD OF STUDY	
1. Background and Perspective.....	3
2. Objectives and Contents.....	6
3. Methodology	10
I. CURRENT STATE OF INDUSTRIALIZATION POLICY	
1. Progress and Current State of Industrialization.....	I-1
2. Current State of Industrial Promotion Policy.....	I-3
3. State of Export Promotion Policies	I-14
4. Foreign Investment Policy and Investment Environment	I-24
II. THE MOLD AND DIE INDUSTRY TODAY AND PROBLEMS	
1. Outline.....	II-1
2. The Mold and Die Industry Today	II-2
3. Results of the Survey in Thailand.....	II-3
4. Industries of Competing Countries	II-7
5. Problems and Countermeasures.....	II-10
III. THE TOY INDUSTRY TODAY AND PROBLEMS	
1. Outline.....	III-1
2. Toy Industry Today	III-1
3. Markets of Other Countries.....	III-3
4. Production Trends of Competing Countries.....	III-6
5. Potential for Development as an Export Industry	III-9
6. Problems and Countermeasures	III-10
IV. COMPREHENSIVE PROGRAM	
1. Imbalance in Industrial Structure and Small- and Medium-Sized Enterprises	
1-1. Growing Imbalance in Industrial Structure	IV-1
1-2. Case of Mold and Die Industry	IV-3
1-3. Case of Toy Industry	IV-4
1-4. Division of Labor Between Large Enterprises and SMEs	IV-4
1-5. Necessity for Small- and Medium-Sized Enterprise Policy	IV-6
1-6. Thailand's Small- and Medium-Sized Enterprise Policy	IV-12
1-7. Sector Approach in Industrial Policy	IV-13
2. Current State and Problems in Policies and Industry	
2-1. Industrial Promotion Policies	IV-16
2-2. Export Promotion Policies	IV-20
2-3. Mold and Die Industry	IV-20
2-4. Toy Industry	IV-25
3. Studies on Countermeasures	
3-1. Industrial Promotion Policies	IV-29

3-2.	Export Promotion Policies	IV-30
3-3.	Mold and Die Industry	IV-32
3-4.	Toy Industry	IV-35
4.	Comprehensive Program	
4-1.	Comprehensive Program for Promotion of Mold and Die Industry	IV-37
4-2.	Comprehensive Program for Promotion of Toy Industry	IV-52
4-3.	Policy and Institutional Approach	IV-67
4-4.	Review of the Priority Ranking of the Proposed Project	IV-76

APPENDIX

List of Members Concerned		
-	Steering Committee	A-I-1
-	List of Thai Delegation	A-I-2

Contents of Charts and Tables in Summary

Chart	Workchart	13
Table I-1.	Main Economic Indicator During Development Plan	I-2
Table I-2.	Industrial Development Promotion in 5 Asian Countries & Areas.	I-11
Table I-3.	Trends in Top 10 Export Items	I-21
Table I-4.	Export Industrial Promotion and Export Promotion in 5 Asian Countries & Areas.....	I-22
Table I-5.	Trends in Applications for Investment Promotion	I-25
Table I-6.	Number of Japanese Investment Projects Classified by Type of Industry	I-26
Chart II-1.	Percent Shares of Small-Size Mold and Die Companies	II-9
Chart II-2.	Development Process of Mold and Die Industry	II-17
Chart II-3.	Level of Industrial Development and Processing Precision of Mold and Die Industry	II-18
Chart II-4.	Problems of Mold and Die in Thailand	II-19
Chart II-5.	Countermeasures of Mold and Die Industry	II-20
Chart II-6.	Roles of Mold and Die Manufacturers Association in Thailand (Provision Name)	II-21
Chart III-1.	Import Amount and Share of Toy Production in the World	III-4
Chart III-2.	Export Amount and Share of Toy Production in the World	III-5
Chart III-3.	Growth Rate of Main Toy Exporting Nations & Areas of Asia....	III-8
Chart III-4.	Model of Toy Industry Development	III-16
Chart III-5.	Outline of Major Toy Manufacturing Countries and Areas	III-17
Chart III-6.	Japan Market, Import from Asian Countries and Areas	III-18
Chart III-7.	U.S. Market, Import from Asian Countries and Areas	III-18
Chart III-8.	Current Situation and Promotion Measures for Toy Industry	III-19
Table III-1.	Plastic Toy Manufacturers Classified According to Scale and Characteristics	III-2
Chart IV-1.	Development and Policy of Economy, Society and Industry in Thailand	IV-2
Chart IV-2.	Four Different Approaches for Industrial Policy	IV-15
Chart IV-3.	Programme for Promotion of Mold and Die Industry	IV-45
Chart IV-4.	Programme for Promotion of Toy Industry	IV-60
Chart IV-5.	Action Taken by Ministry of Industry Concerning Enforcement of Comprehensive Programme	IV-79
Table IV-1.	Organization of Small- and Medium-Sized Enterprise Policies of Japan	IV-9
Table IV-2.	Current Situation, Problems and Countermeasures of Industrial Promotion Measures	IV-18
Table IV-3.	Current Situation, Problems and Countermeasures of Export Promotion Measures	IV-21
Table IV-4.	Current Situation, Problems and Countermeasures of Mold and Die Industry	IV-23
Table IV-5.	Current Situation, Problems and Countermeasures of Toy Industry	IV-27

Table IV-6.	Programme for Promotion of Mold and Die Industry	IV-42
Table IV-7.	Programme for Promotion of Toy Industry	IV-57
Table IV-8.	Policy Countermeasures, Programme for Promotion of Mold and Die Industry and Toy Industry	IV-71
Table IV-9.	Summary of the Results of Review of Project Priority Ranking (Mold and Die)	IV-77
Table IV-10.	Summary of the Results of Review of Project Priority Ranking (Toy)	IV-78

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.

The JETRO-NKK Joint Venture has organized the Study Team consisting of the members listed below:

Akira INOUE	Team Leader/Economist (Senior Economist, Director, Development Survey Project Group, JETRO)
Sadao SHIMAZU	Deputy/Economist (Deputy Director, Development Survey Project Group, JETRO)
Chuji KIKUTANI	Development Economist/Engineering Industry (Assistant Director, Development Survey Project Group, JETRO)

Toshio INOMATA	Development Economist/Export Promotion (Assistant Director, Development Survey Project Group, JETRO)
Masahiro SHIMADA	Economist/Industrial Policy (Development Survey Project Group, JETRO)
Makoto NANBARA	Economist/Toy Industry (Development Survey Project Group, JETRO)
Shoichi SATO	Deputy/Industrial Engineer/Management (Deputy General Manager, Maritime Development Dept. NKK Corporation)
Hiroyuki TANAKA	Economist/Managment (Manager, Maritime Development Dept. NKK Corporation)
Takanari SAWAHATA	Industrial Engineer/Mold&Die (for plastic) (Mechanical Engineering Consultant)
Shiro SUZUKI	Industrial Engineer/Mold&Die (for press) (Mechanical Engineering Consultant)
Tsuneo KANBE	Industrial Engineer/Stuffed Toys (Industrial Engineering Consultant)
Soichi TAKAI	Industrial Engineer/Plastic&Metal Toys (Industrial Engineering Consultant)

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 overseas offices. Others were implemented by documentary survey.

Mold & Die Industry

Industry Survey of Competitive Country/Area	ROK, Hong Kong, Singapore
---	---------------------------

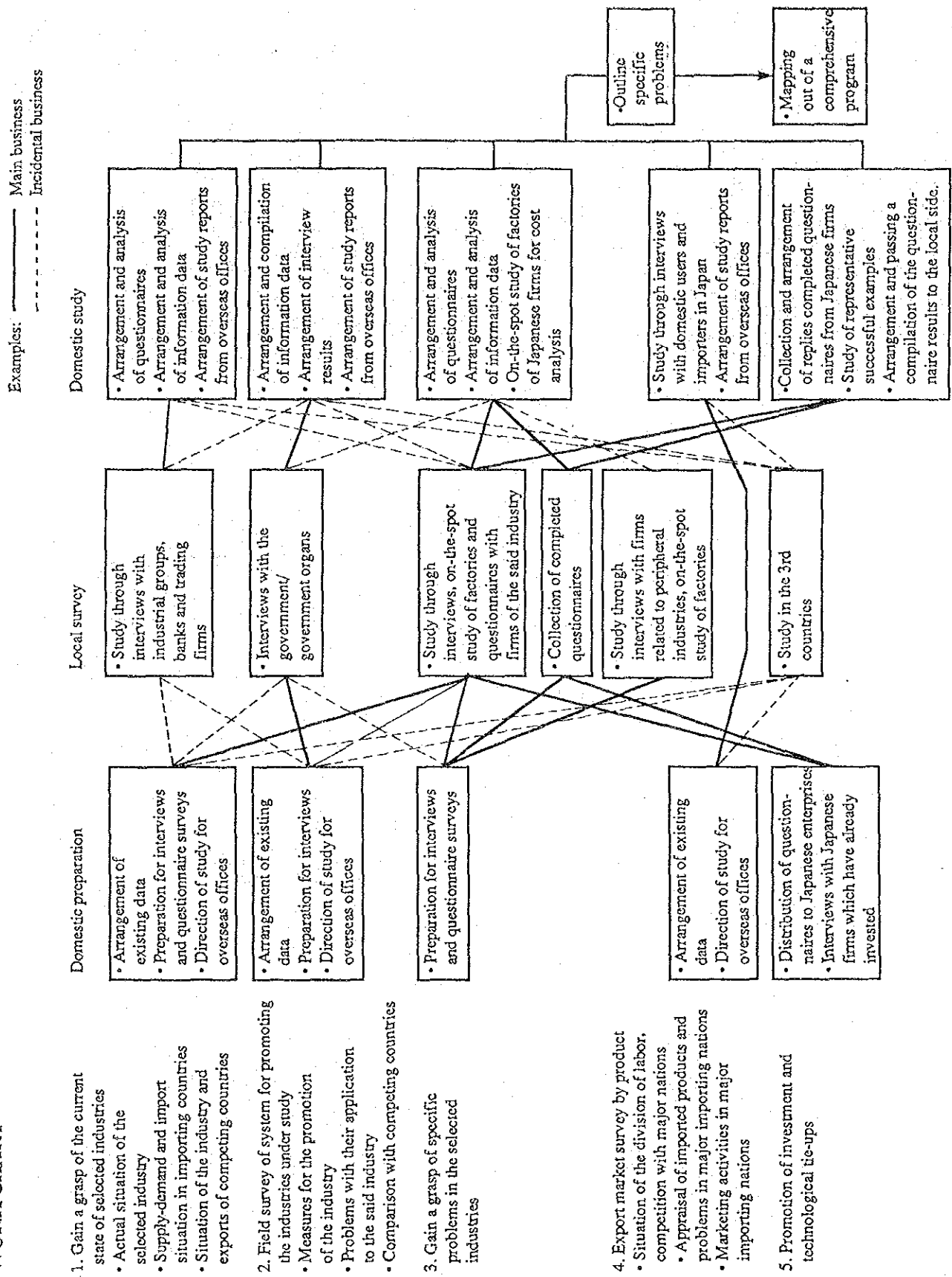
Toy Industry

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



I. CURRENT STATE OF INDUSTRIALIZATION POLICY

I. Current State of Industrialization Policy

1. Progress and Current State of Industrialization

(1) Trends in Industrialization

Thailand is blessed with agricultural and forestry resources, in particular rice, rubber, tin, and teak, and so was oriented to exports of primary products (these four products once accounted for 85% of all exports) and continued to maintain a trade surplus while importing numerous consumer goods, including textiles.

After World War II, the rapid rise in the population, the sluggish production of primary products, and falling prices resulted in a chronic trade deficit in Thailand since 1952. This was one reason for the decision to promote industrialization.

Industrialization in Thailand began with the establishment of the state-run enterprises in the 1950s and progressed to encouragement of import substitution industries in the 1960s and encouragement of export industries in the 1970s, finally leading to exports of industrial manufactures, but the effects of this began to appear clearly only in the 1980s.

(2) Current State of Manufacturing Industries

In 1950s, 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%.

In 1960, the value of Thailand's exports of manufactured goods was less than 1% of the total exports, but reached 55.4% in 1986 and 58.8% in 1987. Accounting for large shares in the value of exports of manufactured goods were textile products, jewelry, electronic goods (ICs), and processed foods. In 1986, garments alone surpassed the value of rice exports, which once held an unshakable position in exports.

In 1950, there were 1,561 registered factories, but this rose to 85,000 or more in 1986. However, most of the manufacturing companies are small in size, with 64% of even the registered factories having less than 10 employees. Only 1.2% of all factories have over 200 employees, i.e., are large factories.

In 1987, there were 639 applications for investment made to the Board of Investment (BOI) from foreign companies (4.8 times the number of the previous year). The total value of investment soared to 151.2 billion bahts (up 8.8 times from the previous year). Thailand is undergoing a dynamic process of export industrialization.

Table I-1. 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 (% of nominal GDP)	26.0	20.4	24.6	22.6	18.2
Investment rate (% of 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

2. Current State of Industrial Promotion Policies

Thai's industrial promotion policies have been implemented since the 1970s in the form of investment incentives for prior industries by the BOI. In the current sixth Five-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 agroindustries.

This policy is basically the same as that in the fifth Five-Year Plan, but to raise the plan effectiveness, the planning agency, i.e., NESDB (National Economic and Social Development Bureau), no longer takes a hand in the plans of all fields, i.e., the specific development plans and main projects for individual sectors are formulated by the individual ministries and agencies in charge.

The BOI, which has become the central organization in the execution of industrial promotion policies, has the authority to provide exemptions and deductions of corporate taxes and business taxes and protection from competing imports, but its foreign investment policy has produced results, promoting foreign investment and leading to promotion of export industries. For promotion of regional industries and small- and medium-sized industries, the BOI has been reviewing the classification of investment promotion zones and lowering the minimum investment for receipt of the incentives. To promote the engineering industry as a supporting industry, which has shown up the unbalance of the industrial structure, it is preparing a list of indigenous related enterprises interested in joint ventures with foreign capital, applying its incentives to indirect exports, and taking other measures.

In the Ministry of Industry, which holds jurisdiction over the industrial sector, the Industrial Economic and Planning Division (IEPD) is in charge of planning and drafting of industrial policies, coordinating between related government agencies, and executing policy. The Department of Industrial Promotion (DIP) deals with promotion activities for small- and medium-sized industries and regional industries. As an example of the industrial promotion policies taken up by the MOI, mention may be made of the policy of conversion to domestic production of automobiles and auto parts. Like the investment incentives of the BOI, privileges are given to specific enterprises while promoting the industries.

The mold and die industry, however, is only handled as part of the activities of the MIDI, which was launched in 1988 as a research, education, and training facility in the DIP. There is no specific government section in charge of the industry and the industry is yet to be taken up in the policies of the IEPD.

As for toys, considered an important export commodity, the Ministry of Commerce is exerting effort in marketing, but the MOI has not taken any measures for promotion of the toy industry as a whole and has not established any specific section to take charge of the industry. At the present time, it is at the stage of providing technical guidance for toys, and distributing different sections and staff according to whether the toys are made of plastic, cloth, or other materials.

Industrial organizations are forums for exchanges of opinion with the industry on execution of industrial policies. In the manufacturing sector, there is the FTI (Federation of Thai Industries), which is comprised of about 1,800 member firms. The FTI had 24 clubs organized for each industry as of February 1988, but nothing has yet been organized for molds and dies. The association of toy manufacturers, which was only recently established, is considering joining the FTI.

(1) Problems in Industrial Promotion Policies

<Investment Incentive Policies>

At the heart of the industrial promotion program in Thailand are the incentives of the BOI. These investment incentives have contributed greatly to Thailand's industrialization. However, the Investment Promotion Act limits the companies given special tax privileges etc. and further tends to give priority to large investments due to investment efficiency and problems with the personnel of the examination staff. Therefore, the incentives cannot be easily used by existing SMEs (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 such as parts industries, etc. For this reason, there are still large amounts of parts and intermediate goods being imported in industrial fields producing final products such as home electrical appliances and automobiles, which have shown steady development.

Further, in promotion of the mold and die and other supporting industries, which are small in size, the government is trying to attract companies from abroad through the Investment Promotion Act so as to improve the industries, but this is causing problems such as criticism of unfair competition from the existing domestic industries, which do not enjoy any preferential treatment.

<Industrial Promotion Policies>

Due in part to the fact the industrial policies of Thailand have been based primarily on the investment incentives of the BOI, the Ministry of Industry, which should serve as the main organization for executing policy, has stressed management of factories and

technical guidance. Therefore, despite the sudden expansion of industrial fields growing along with the progress in the industrialization program or to be promoted in the future, sections into the MOI in charge of drafting and executing policies for promotion are undeveloped and not organized to deal comprehensively with industrial matters 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, resulting in unfair treatment of companies in the same industry.

Industrial organizations, a powerful medium for drafting and executing industrial promotion policies, are limited in organizational ability and functions due to the characteristics of Thai businessmen, who tend to lack cohesiveness as an industry, the low awareness of the merits to be gained from organization, and the lack of incentives from the government.

(2) Small- and Medium-Sized Industry Promotion Policy

<State of Small- and Medium-Sized Industry Promotion Policy>

Thailand is using foreign investment to achieve steady industrialization and has achieved particularly striking economic development in the metropolitan regions. On the other hand, the concentration of industry around the cities has led to a wider gap in income levels among regions. Looking at the industrialization in more detail, positive promotion of foreign investment has helped enable domestic production of complete industrial products such as textiles, home electrical appliances, and transport machinery, but there has been a considerable delay in the establishment of the parts industries and related industries for supporting them. Most of the components and parts are imported. In recent years, most investment has been to the export-oriented industries, but the lack of supporting industries for these restricts activities of the export industries and invites greater trade deficits through a rapid rise in imports of parts and materials.

Ninety-six percent of the businesses in the metal and machinery industries are cottage industries or small businesses with less than 49 workers. The current economic and social plan places great hopes on the SMEs in terms of absorbing labor, contributing to regional development, contributing to exports, and serving as subcontractors and supporting industries for supplying parts.

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 use of domestic materials, and improvement of added value. The central organization for handling specific proposals for and implementation of this policy is the Department of

Industry Promotion (DIP). The DIP has seven sections, one institute, three regional offices, and one external organization in charge of financing.

Guidance on technology is handled by the Industry Service Institute (ISI) and the MIDI. The Information Service Unit (ISU) project is underway to provide technological and general industrial information to regional enterprises through ISI. Management guidance and marketing assistance are being handled by the Thailand Management Development and Productivity Center (TMDPC) of the Industrial Productivity Division (IPD) of the DIP, which offers seminars and training as well as consultation services. The courses are very popular, 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. Financing is under the jurisdiction of the SIFO, an organization under the Planning Division.

<Problems in Promotion of Small- and Medium-Sized Industries>

The DIP, the central organization for assistance to the small- and medium-sized industries, limits its activities to providing technical and management guidance to individual enterprises and is behind in formulating policies or establishing organizations for promoting related industries overall. 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, and there are mainly programs laying stress on technical or design guidance, but no system for promotion of the toy industry as whole.

For this reason, in view of problems in its coordinating ability 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 industries emphasized for promotion and to carry out promotion of industry as a whole on a comprehensive basis.

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 raise the general efficiency of implementation of policies, it would be desirable to establish an exchange of personnel among the various sections so as to stimulate activities further.

(3) Current State and Problems in Organization of Information and Materials

The DEP, 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 sections of the DIP of the Ministry of Industry in the volume of materials and information available. However, looking at the materials, there are mostly old directories and trade statistics on hand and little material which enables one to obtain a grasp of new overseas product trends and market trends. In the Ministry of Industry, the technological and management training branch, the TMDPC, has a collection of about 4,500 works on business management. The IDC, which engages in corporate tie-ups and technical guidance, has a reference library and is collecting dictionaries and technical journals, but the number of materials is small, unbecoming the name of "library".

To promote use of information by the SMEs, 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 regard, some organizations have been translating materials into Thai, but the amount is insufficient.

(4) Taxes, Tariffs, and Finance

<Taxes - Problems with Business Taxes>

The tax structure features a low percentage of direct taxes and a high percentage of indirect ones such as business taxes and excise taxes. The current business tax is assessed on the total sales or total revenue for each stage of transactions except retailing.

Since the current business taxes are assessed on the total sales or total revenue with no exemptions for expenses, businesses involving numerous stages of transactions suffer from heavier tax burdens. Therefore, in general, it is more expensive to build up affiliated subcontractors and raise productivity by the "economy of scale" than to use imported parts, which entail a lower tax burden than do business taxes, or produce parts in-house and form a vertical production system. This situation has become a major obstacle to the formation of supporting industries and affiliated subcontractors.

The Thai government is currently studying and preparing for the introduction of a VAT (valued added tax) and major reforms of the tax system.

<Tariffs>

In import duties, the Harmonized System was introduced and implemented from January 1988. A tariff of 25% to 60% is applied to the majority of imports primarily by the ad valorem method. Recently, Thailand has been making frequent reviews of the

system of taxation of imports and tariffs as a means of suppressing imports for protecting new industries.

Taxes on imports include those assessed on imported products of the same type as products and produce made by domestic parties encouraged by the BOI under the Investment Promotion Act and tariffs and various other taxes established and assessed provisionally by the Ministry of Finance.

The methods of calculation of the business taxes on imports are as follows:

$$\begin{aligned} &(\text{CIF price} + \text{import duty}) \times \text{standard profit rate} = \text{standard profit margin} \\ &(\text{CIF price} + \text{import duty} + \text{standard profit margin}) \times \text{business tax rate} = \\ &\text{business tax} \end{aligned}$$

There has been criticism regarding the method of assessment of taxes upon imports to the effect that the anticipated profit margin based on the standard profit rate is too large.

<Financing>

The public institutions providing financing for manufacturers are the Industrial Finance Corporation of Thailand (IFCT) and the Small Industry Finance Office (SIFO) under the Ministry of Industry. In addition, the Bank of Thailand is engaged in refinancing of industrial bills through the commercial banks. The IFCT has established a credit guarantee system (SICGF).

The IFCT's Small Scale Industry Finance Facility provides loans to businesses with fixed capitals of up to 10 million bahts in amounts of up to 5 million bahts. The Export Industry Modernization Program is currently being applied to eight export oriented industries.

The SIFO loans are provided to businesses with fixed capitals of up to 10 million bahts by two methods: loans through the Krun Thai Bank and direct loans of the SIFO. The loan ceilings are 3 million bahts and 500,000 bahts, respectively.

The minimum loans under the industrial bill refinancing system of the Bank of Thailand is 30,000 bahts for general and 10,000 bahts for small enterprises.

The Small Industry Credit Guarantee Finance System (SICGF) is available for use of businesses with fixed capitals of up to 10 million bahts and covers loans of from 200,000 bahts to 5 million bahts. The guarantee covers 80% of the amount not covered by collateral.

<Problems in Financial Systems>

[1] IFCT

The biggest problem facing the IFCT overall is the lack of stable sources of supply of low cost funds. The IFCT must set interest rates by the cost-plus method, so the rates often end up higher than those of the commercial banks.

[2] SIFO

The biggest problem is the restriction on expansion of business due to an insufficient budget. Usage of the direct loans is increasing, but the loan ceiling is a mere 500,000 bahts, lower than that of other financial systems and not enough for the needs of business. Further, the SIFO is not an independent corporation in status and thus cannot become a member of the SICGF, so the credit guarantee system of the SICGF cannot be used for the direct SIFO loans.

[3] Industrial Bill Refinance System of Bank of Thailand

The procedures for usage are complicated. There is insufficient publicization of the system, and the profit margin for the financial institutions is too small, so private financial institutions shy away from positive use.

[4] SICGF

The operating costs have to be covered by the guarantee fees and the interest on the fund, so the operating funds are limited.

(5) Industrial Promotion Policies of Third Countries

South Korea began export-oriented industrialization in the 1960s under the guidance of the government and made great headway in creation of export-oriented industries and heavy industries in the 1970s. In particular, the government placed stress on the heavy machinery and chemical industries and provided massive low interest financing through overseas loans. It also provided low interest financing for the export industries.

Taiwan worked to promote its basic industries through state-run corporations, but at the same time, the private sector took the lead in the development of export industries in the light industrial sector where advanced technology was not required. Taiwan began industrialization in the heavy machinery and chemical fields in the 1970s, but the tempo of development was slow due to the careful financial and fiscal policies taken and the basic stance of emphasizing improvement of the local standard of living.

Japan had completed the reconstruction of its economy in the middle 1950s and embarked on a program of export promotion through rationalization of its industries. The means used to implement its policies were preferential tax measures and low interest

financing by government-affiliated financial institutions. While stressing the development of key industries, it also emphasized the growth of SMES, as an integral part of industrial development, through privileges in taxes, financing, etc.

Table I-2. Industrial Promotion in 5 Asian Countries & Areas

JAPAN	KOREA	TAIWAN	THAILAND	MALAYSIA
<p>Postwar Reconstruction Period (1946-48)</p> <p>“Priority Production System”</p> <p>Material Quota/Reconversion</p> <p>Finance Bank Loans/Price Control</p>				
<p>Industrial Rationalization Period (the first half of 1950's)</p> <p>Preferential Treatment for equipment investment (special depreciations)/Loans from the Japan Development Bank/Tax Exemptions</p>	<p>After The Disturbance in Korea (1950's)</p> <p>Import Substitution Industrial Development Promotion Aids Quota System/Double Exchange Rate/Tax Exemption for Raw Materials & Machinery</p>	<p>Import Substitution Industrialization Period (the first half of 1950's)</p> <p>Adjustment of Public Key Industries—Sugar, Cement, Fertilizer, ... etc./Textile Industry Promotion with Bave Import Quota</p>	<p>Import Substitution Industrialization Initial Stage (1950's)</p> <p>Act on Promotion of Industries (1954)</p> <p>Import Substitution Industrialization Focusing on National Enterprises & Light Industry</p>	<p>Import Substitution Industrialization Initial Stage</p> <p>Pioneer Status Ordinance (1958)</p> <p>Tax Exemptions & Deductions for Pioneer Enterprises/Import Substitution Industrialization (Food Processing & Textile)</p>
<p>Industrial Development Promotion Period (the latter half of 50's)</p> <p>Synthetic Fiber, Petrochemical, Electronics, Machinery</p> <p>Tariff Protection/Selective Fiscal • Financial Policy</p> <p>(Loans from the Japan Development Bank, Depreciations, Tax Exemptions & Reductions)/Approval of Technology Introduction</p>		<p>Transitional Period to Export Oriented Industry (the latter half of 50's)</p> <p>Adjustment of Public Key Industry/Textile • Agricultural Product Processing Industry Development.</p>		

JAPAN	KOREA	TAIWAN	THAILAND	MALAYSIA
<p>High-Growth Period (1960's) Building an Open Economy. Industry-Government Cooperation System (Investment Adjustment/Co-ordination of Production Field/Industry-by-Industry Development Programs (Law on Extraordinary Measures for Machinery Industries/Law on Extraordinary Measures for Electronic Industries.)</p>	<p>Transition to Export Oriented Industrialization (1960's) Stressing Economic Growth. Introduction of Foreign Capital (Mainly Loans)/Export Light Industry Promotion/Tax Exemptions/Key Industry Promotion With The Government Initiative & Intervention</p>	<p>Export Oriented Industrialization in Full-Swing (1960's) Introduction of Foreign Capital (Loans & Direct Investment)/Focusing on Private Sector/Export Processing Zone/Tax Exemptions & Deductions/Trading Company Promotion</p>	<p>Import Substitution Industrialization Progressive Stage (1960's) Promotion of Industrial Investment Act/Stressing Public Enterprises & Introduction of Foreign Capital/Remittance Foreign Capital Liberalization/Tax Exemptions of Raw Materials & Machinery Imports/Foundations of IFCT, SIFO</p>	<p>Import Substitution Industrialization Progressive Stage (the latter half of 1960's) The First Malaysia Plan (66-) Import Substitution Industrialization by Introduction of Foreign Capital.</p>
<p>Stable Growth Period (1970-) Drawing up "Vision". Utilizing Market Mechanism. Knowledge-Intensive Industry. High Technology Development.</p>	<p>Export Oriented • Heavy & Chemical Industrialization (1970's) "Heavy & Chemical Industries-Strategic Industrial Development Plan" Government Controlled Financing Organization. Export Industry • Heavy & Chemical Industries Promotion With Low-Interest Loan. Expansion of Equipments in Private Enterprises.</p>	<p>Heavy & Chemical Industrialization (1970's) 10 Major Development Plan Foundation of Public Enterprises of Iron & Steel, Oil and Shipping/Social Capital Adjustment</p>	<p>Parallel Commitment With Export Oriented Industrialization (1970's) Expanding Introduction of Foreign Capital/Strengthening BOI/Expanding privilege on Tax</p>	<p>Parallel Period of Import Substitutional Industrialization & Export Industry Promotion (1970's) New Economic Policy (NEP) Export Industry Promotion (Parallel with Import Substitutional Industrialization) Industrial Coordination Act. Guide Line of Foreign Capital Introduction Export Processing Zone. Heavy & Chemical Industrial Promotion.</p>

JAPAN	KOREA	TAIWAN	THAILAND	MALAYSIA
	<p>Liberalization • Heavy Chemical Industries</p> <p>Co-ordination (1980's)</p> <p>Economic Liberalization.</p> <p>Leaving Public Cooperation to Private.</p> <p>Foreign Capital Liberalization. Finance Liberalization. Heavy & Chemical Industries</p> <p>Co-ordination</p> <p>Small- and Medium-size Enterprises Promotion</p>	<p>High Technology Promotion (1980's)</p> <p>Specifying Strategic Industry.</p> <p>Tax Exemptions for Electronics & Machinery/Low-interest Loans/Preferential Internal Revenue Fund/Automobile Industry Promotion.</p>	<p>Export Oriented Industrialization in Full Swing (1980's)</p> <p>Massive-neutralizing Foreign Capital Constraints/Strengthening Foreign Capital In-troduction/Approval of Majority Foreign Capital/Tax Exemptions & Deductions for Export Oriented Investment</p>	<p>Export Oriented Industrialization (the latter half of 1980's)</p> <p>The Fourth Malaysia Plan.</p> <p>Review of Foreign Capital Constraint.</p> <p>Specifying 12 Prior Type of Industry According to Industrial Master Plan.</p>

3. State of Export Promotion Policies

Thailand's export promotion measures can be roughly divided into [1] tax incentives such as exemption and reduction on import duties and business taxes, income deductions on export income, refunds on import duties, and rebates on indirect taxes such as import duties and business taxes, [2] the export credit refinance system of the Bank of Thailand, [3] the establishment of bonded manufacturing warehouses and export processing zones, and [4] the activities of the Department of Export Promotion of the Ministry of Commerce.

(1) Tax Privileges

These include privileges extended to projects promoted by the Board of Investment and the refund and rebate systems of import duties and indirect taxes handled by the Custom Department of the Ministry of Finance and the Fiscal Policy Office.

<Privileges of BOI>

Under the Investment Promotion Act of 1977, the BOI may designate certain projects as approved for promotion of investment, a status which is accompanied by special rights, and give tax privileges to investment promotion projects.

The Investment Promotion Act provides the following privileges to export-oriented companies:

- [1] Exemption on import duties and business taxes for raw materials used to manufacture export products. Exemption of import duties and business taxes on purchases of domestic raw materials.
- [2] Exemption on import duties and business taxes on reexported items
- [3] Exemption on export duties and business taxes
- [4] Deductions from taxable corporate income of equivalent of 5% of increase of exports over previous year, not including freight and insurance.

Of these, [1], [2], and [3] are aimed at giving export products price competitiveness through lessening of the tax burden on imported raw materials, like the later mentioned tax drawback and tax rebate systems, while [4] is aimed at providing financial assistance to export promoted enterprises.

<Problems and Issues>

The investment privileges of the BOI have played a large role in the expansion of exports of industrial manufactures, but there will be the following problems in the future.

First, it is necessary to clarify the guidelines for application of investment privileges for indirect export companies. Most of the increase in exports of industrial manufactures starting in the 1970s was based on industrial goods through processing deals. The group of products features a high dependence on imports of parts and intermediate goods. Therefore, the exemption and reduction of tariffs and indirect taxes on imports of input goods contributed to strengthening the international competitiveness of the export products, but on the other hand it resulted in a delayed growth of the domestic parts and intermediate goods industries. If Thailand is to proceed to shift its exports of industrial manufactures from one based on processing deals to one where it supplies its own parts and intermediate goods, then it will have to quickly promote investment in these fields. However, in extending its privileges, the BOI relies much on negotiations with the investing companies. This is one factor which causes companies interested in investment to hesitate in their investment plans. If the BOI were to make the guidelines for application of privileges in these fields clearer, it might help promote investment.

Second, there is the strengthening of privileges for technical transfers. The BOI scheme is effective for strengthening international competitiveness by reducing costs, but does not sufficiently promote transfer of technology in industries where direct cost reductions are less urgent than improvement of technology, such as the mold and die industry. Future topics which should be considered are the improvement of the quality of export products and the improvement of the level of technology for the same.

(2) Tax Refund

In addition to the incentives of the BOI, the Customs Department offers tax drawbacks. This system allows for the repayment of import duties assessed on imported raw materials and parts and imported semifinished goods included in export products.

There are the following three main conditions to use of this system:

- [1] The amount of the imported goods used for the production, assembly, or packing of export goods is calculated by the customs authorities based on a predetermined formula.
- [2] The exports must be made within one year after the import of the goods covered by the refund.
- [3] The demand for the drawback must be made within six months of the export of the export goods in principle.

When using this system, producers of export goods pay for the various import related taxes in cash upon the import or else give a bank guarantee (yearly rate of 1.5%).

<Problems and Issues>

There was criticism about the refund system, e.g., the long time taken until actual repayment and the heavy interest cost, but in recent years the Customs Department has been working on this and has shortened the period until repayment to an average three to four months. However, for some products, it is said that trouble frequently occurs between the applicants and customs authorities on the percentage of imported raw materials and parts and semifinished goods included in the export product. The agency in charge of this system, the Fiscal Policy Office, ranks applicant companies and speeds repayments to top ranked companies.

(3) Tax Rebate System

The Fiscal Policy Office makes available a tax rebate system under the Tax Rebate Act. This system is administered by the Customs Department. Under the system, part of the import duties, business taxes, etc. (not including income taxes, royalty taxes, regional taxes, and taxes exempted by above tax refund) are assessed on materials, equipment, and parts included in export products. The rebates are paid out in tax coupons which are valid for three years. The rebate rates are calculated by a different system from the tax refunds, i.e., are indicated by ratios of FOB prices for each product according to the customs classification. The rebate rates come in two types: A and B, with the A-rate schedule applying to imported and domestic raw materials, etc., and the B-rate schedule applying to just domestic raw materials etc.

<Problems and Issues>

The repayment term of this system is short, usually from one to two months. However, it seems that the Fiscal Policy Office will be delayed in the transition to the H.S. method of classification of goods, a project in which it is now engaged.

(4) Export Finance

As financial incentives for export, there is the export credit refinance offered by the Bank of Thailand through the commercial banks. Under this system, the BOT provides low interest finance to commercial banks for financing export related bills issued by export companies. The aim of this is to strengthen the price competitiveness by reducing interest costs and improving the profit margins of export companies.

<Problems and Issues>

The export credit refinancing system of the BOT has grown steadily and in recent years has covered from 40% to 50% of the total value of exports. The items covered by the system used to be largely so-called traditional export goods such as rice, tapioca, sugar, and maize, but recently there has been an increase in financing for manufactures such as canned foods. This may be considered to reflect the effects of the reduction of the interest rates on new, nontraditional export goods, the privileges extended to small scale export companies in financing, etc.

However, problems still remain. First of all, from interviews with different companies, it was reported that while the procedures, including preparation of various documents, are being streamlined, they are still fairly complicated. That is, companies have to submit financial statements, tax payment documents, and various other materials along with their applications. Usually, small- and medium-sized enterprises only rarely have all these documents on hand. Under the present conditions, therefore, these procedural problems are one of the main obstacles, as has been pointed out often. Supposedly, even the commercial banks are forced to engage in complicated administrative processing work due to the need to check on the credit of the companies for the BOT. On top of this are the severe restrictions of the BOT. This makes new borrowers reluctant to apply for the finances.

Second, the financing is extended in large measure to large corporations and exporters of traditional export items. Financing of small- and medium-sized enterprises, with their low credit ratings, is inherently something to be avoided by the commercial banks in view of risk management. (For example, it was reported that there were less than 20 cases of financing of industrial bills of small- and medium-sized enterprises in the eight years from 1978.) Therefore, commercial banks demand securities as a condition for loans, thus limiting the increase in financing of small- and medium-sized companies.

A 1984 survey showed that the average export credit of the 482 small sized export companies out of a total 863 export companies studied was less than 2 million bahts and that these firms accounted for just 4% of the total financing. As opposed to this, the average financing to the top 30 companies was 300 million bahts, accounting for one-half of the total financing. For this reason, the fifth plan propounded the establishment of an Export Credit Guarantee Institute.

Third, the system should preferably be expanded more and be given more flexibility in execution. The coverage by export refinance of all exports in 1987 fell to 27% from the 47% of 1985 and the 42% of 1986. The reason may lie in the smaller difference in its interest rates from commercial interest rates, but promotion of exports of

industrial manufactures in the future will probably require raising the financing ceiling and giving more flexibility in interest rates.

(5) Export Processing Zones and Bonded Factories

The export processing zones are established inside industrial estates for the effective promotion of export companies. To qualify for entry into an export processing zone, a company must export all of its production. The incentives to resident companies include the incentives given to the industrial estates plus the following:

- [1] Exemption of import duties and business taxes on imported machinery and materials
- [2] Rebates of import duties and business taxes on materials purchased from domestic businesses
- [3] Exemption of export duties and business taxes on exported products

An export processing zone was established in the Lat Krabang Industrial Estate and others are being constructed at the Northern Industrial Estate and Laem Chabang Industrial Estate

Further, there are now over 70 bonded factories. These enjoy the same privileges as companies in the export processing zones.

<Problem and Issues>

[1] The IEAT is supposed to handle applications for entry into industrial estates and the construction and management of industrial estates, but companies scheduled to enter the export processing zones are supposed to apply to the BOI when receiving exemptions on corporate taxes. In recent years, the export processing zones have been also been dispersed to regional areas. It is therefore desirable that a single agency handle everything.

[2] More and more export processing zones have been established in recent years, notably in the regional areas. This is part of the government's policy of dispersing factories to the regional areas, but there is a problem with the infrastructure in such areas. It has been said that even various privileges (such as on water supply, power, and transportation) would not be enough to eliminate corporate unease over such locations, and that the government should strive harder to establish the necessary infrastructure.

[3] Comparing the privileges of the bonded factories with those of companies in the export processing zones and those of the BOI, due to the condition imposed to the effect that goods imported under bond be reexported within one year, there is in practice no exemption of import duties or business taxes on imports of machinery. From the

viewpoint of promoting rural industry, it would be desirable if a broader range of incentives were extended.

(6) Department of Export Promotion (DEP)

The Department of Export Promotion is an agency under the Ministry of Commerce and is in charge of marketing in overseas markets and collection of information for the purpose of export promotion.

<Problems and Issues>

The various activities of the DEP contribute considerably to the improvement of the export environment - an area in which the government should play the leading role, but there are many problems in expansion of activities and improvement of efficiency.

First, a factor inhibiting the expansion of activities is the limited budget. The World Bank ran a survey in 1985 on the export promotion organizations of the world. Compared by country, Thailand spends about half that of Hong Kong, Sri Lanka, and Taiwan in public funds for export promotion activities (not including export related financing). Apart from that, it has insufficient overseas market information and commodity information and, in particular, has insufficient information on competing countries. At the present, it would be desirable that Thailand establish trade centers, now in 13 locations, in the competing export countries as well to improve its ability to gather information.

Second, there is the problem of improvement of efficiency of activities. The DEP is promoting the establishment of export associations through its various activities.

To further promote these services, it is necessary to more positively reflect the wishes of the exporting companies in the formulation of projects and foster closer ties between the DEP and private companies. Toward this end, greater activity by the regional branches and a brisker exchange of opinions between the DEP and private companies would be desirable.

Third, there is the problem of coordination with other agencies in the export promotion activities and consolidation of projects. Promotion of exports requires projects spanning administrative boundaries of the various government agencies. In Thailand, the semipublic Export Development Committee (EDC), chaired by the Minister of Commerce, is in charge of such coordination and elimination of obstructions to exports. However, there is a complicated tangle of authority among the various ministries and committees and the EDC has been unable to perform as envisioned, it has been pointed out. One

conceivable method to deal with this would be to set up an independent agency for execution of export promotion projects.

(7) Export Inspection System

Thailand established its export inspection system with the 1960 Export Standard Act. In 1979, it further established the current Export Commodities Standards Act. Under this system, exporters of items designated as requiring inspection register with the Commodities Standards Division of the Foreign Trade Department of the Ministry of Commerce, under inspections by the inspection offices or designated inspection organizations, and receive quality certificates.

<Problems and Issues>

At the present time, the actual export inspections are performed by public testing organizations and the SGS and other private firms and there are not particular problems. However, in the future, it will be necessary to extend the coverage of the compulsory inspections to industrial manufactures and light industrial goods. Toward this end, it is desirable to obtain more inspection facilities and measurement apparatus and further improve the industrial standards.

As a second point, the advanced nations are currently all establishing sanitary regulations. The requirements on sanitary standards from the markets of the advanced countries are currently being handled by the Thai exporters themselves through the inspection organizations, but to secure confidence from these markets, it would be necessary to establish strict, independent sanitary regulations which prohibit the sale of toys or other items containing toxic or harmful substances.

(8) Directions of Export Promotion Policies of South Korea and Taiwan

The most efficient incentive offered in the export promotion policy of South Korea may be said to have been the low interest export financing. The interest rate for this financing remained about under 10% through the 1960s and 1970s, with the difference from interest rates on loans from commercial banks reaching a maximum 20%. During this period, export financing accounted for about 50% of the total loans made by the Bank of Korea.

On the other hand, in the tax system, South Korea abolished the commodity tax on export goods and the business tax on export industries in 1961. Further, it introduced a

value added tax in 1977, thus returning almost all taxes paid for export goods in the course of manufacture and sale.

Taiwan, on the other hand, first emphasized tax privileges for investment under the Foreigner Investment Act in its promotion of exports, then later shifted its emphasis to construction of export processing zones.

Both these regions, however, have been changing their export promotion policies in recent years. Both, for example, have been lowering their tariff rates. South Korea has been reviewing the privileges provided to export industries since the end of the 1970s, for example, reducing the difference in the interest rates of its export financing from those of the commercial banks. In both regions, the export promotion policies worked for labor intensive goods and light industrial goods, but failed to work for creation of high tech industries requiring advanced technical expertise and creation of export industries of the same, it has been recognized. The two regions have therefore been shifting their emphasis in measures to strengthen international competitiveness away from cost reductions and continual input of labor and capital to improvement of technical capabilities and technical transfers.

A comparison of the histories of the export promotion policies of various regions, including Japan, is shown in Table I-4.

Table I-3. 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-4. Export Industrial Promotion & Export Promotion in 5 Asian Countries & Areas

JAPAN	KOREA	TAIWAN	THAILAND	MALAYSIA
<p>Industrial Rationalization Period (the first half of 1950's)</p> <p>Financial Preferential Measures. Export Preferential Finance (Low Interest Rate Reduction of the Bank of Japan)/Foundation of the Export Bank of Japan in 1950.</p> <p>Tax Preferential Measures. Export Income Deduction Special Deduction for Export Export Insurance. Foundation of JETRO.</p>	<p>After the Disturbance in Korea (1950's)</p> <p>Export Promotion in Import Substitution Industrialization</p> <p>Export Promotion Fund/Export Credit Finance/Foreign Capital Deposit/Export Subsidiaries (but Export was depressed)</p>	<p>Import Substitution Industrialization Period (the first half of 1950's)</p> <p>Public Key Industry Adjustment/Bave of USA Aids</p> <p>Import Quota/Multiple Exchange Rate/Double Price System</p>		
<p>Industrial Development Promotion Period (the latter half of 1950's)</p> <p>Shipment Export (Loans from Export-Import Bank of Japan)</p> <p>Special Deduction of Incomes related to overseas transactions</p>	<p>Transition to Export Oriented Industrialization (1960's)</p> <p>Economic Liberalization • Strengthening International Competitiveness. Plant Export (Loans from Export-Import Bank of Japan) Special Deduction for Exports Overseas Market Development Reverse System Expansion of JETRO</p>	<p>Transition Period to Export Oriented Industrialization (the latter half of 1950's)</p> <p>Starting Rice, Sugar, Agricultural Processing Products Export (Public Sector)/Export • Import Exchange Link System</p>	<p>Import Substitution Industrialization Period (1960's)</p> <p>Promotion of Industrial Investment Act Establishment/Export Promotion According to Economic Plan/Raising Tariff due to Trade Deficit Expansion</p>	<p>Import Substitution Industrialization Period (1958-)</p> <p>Prior Status Ordinance (1958)</p> <p>Import Substitution Industrialization with Introduction of Foreign Capital</p>

JAPAN	KOREA	TAIWAN	THAILAND	MALAYSIA
Export Industry Rapid Growth Period (1970's) Expansion of Low Interest Loan/Export Processing Zone/Won Devaluation/Sōgō-Shōsha System/Export-Import Bank of Korea/Introduction of Value Added Tax	Export Industry Advanced Period (1970's) Strengthening Public Enterprises/Export Insurance/Export Import Bank's Medium- & Long-Term Export Loan System/Foreign Trade Development Association (Far East Trade Service)	Parallel Commitment with Export Oriented Industrialization (1970's) Export Industry Promotion Project by Investment Promotion Act. Investment Preference on Domestic Raw Materials, Labour-Incentive, and Localization/Tariff & Transaction Tax Exemptions & Deductions/Preferential Treatment on Reduction by Bank of Thailand. Strengthening Export Industry Promotion Project Strengthening Tax Preferential Treatment/Sōgō-Shōsha Promotion	Parallel Commitment with Import Substitutional & Export Industry Promotion (1970's) Export Industry Promotion Guide Line of Introduction of Foreign Capital/FTZ Act (1971) Electronics Processing with Introduction of Foreign Capital Export Financial System (1977) BUMIPUTRA by NEP	Export Oriented Industrialization (1980's) Strengthening Export Development Promotion System in 1983 Income Deduction/Accelerated Depreciation/Investment Deduction/Sōgō-Shōsha/Neutralizing Foreign Capital Constraint Industrial Master Plan (1986-) Specifying 12 Prior Type of Industry. Resource • Non-resource
Coping With Trade Conflict (1980's) Export Self-Constraint/Enterprise Advances to U.S.A. Promoting Open Market		Export Oriented Industrialization in Full Swing (1980's) Strengthening Policy Adjustment Function/Strengthening Export Development Promotion Organization/Establishment of Trade Training Center/Strengthening Investment Preferential Treatment & Introduction of Foreign Capital/Various Export Tax Rebate/Consideration on VAT Introduction		

4. Foreign Investment Policy and Investment Environment

(1) Current State of Foreign Investment

After the Plaza Agreement of September 1985, both domestic investment and foreign investment became active. Foreign investment in 1987 rose 2.6 fold over the previous year to 8211 million bahts. By country, Japan was in the lead with 3535 million bahts (43.1% share by country), followed by Taiwan with an investment which surged 32.9 fold over the previous year to 1515 million bahts, the two regions accounting for 61.5% of the total foreign investment. In both cases, the investment was in export-oriented companies, but while the Japanese projects spread over a wide range including electrical and electronic equipment, transport machinery, etc., the investment from Taiwan concentrated in labor-intensive type finished export goods.

(2) Foreign Investment System

The foreign investment system is based on the Investment Promotion Act of 1977 and is supplemented by the Alien Employment Regulation Act, which regulates the fields of employment of foreigners, and the Announcement of the BOI No. 1/1983 Regarding Criteria in Approving Investment Promotion and Tax Privileges, which designates projects to be encouraged.

The Investment Promotion Act takes a positive stance toward the introduction of foreign investment and provides various privileges to companies engaged in promoted projects without regard to whether they are foreign capital or domestic capital enterprises. Investment in Thailand goes through the BOI when accompanied by privileges and through the Ministry of Industry when in nonpromoted industries.

The BOI handles the investment policies of Thailand and is given strong powers to extend tax privileges and protection from competing imports etc. The BOI has the policy of promoting investments fulfilling the following conditions:

- [1] Large contribution to improvement of trade balance through production of export goods
- [2] Assistance to resource development in Thailand
- [3] Increase of employment
- [4] Operation in regional area
- [5] Energy saving or substitution of imported energy
- [6] Preparation of foundation of and further development of industrial development

Table I-5. Trends in Applications for Investment Promotion

	1984	1985	1986	1987	Comparison with previous year		(Unit: Million baht, %)	
					86/85	87/86	Share(%)	87
1. No. of Applications	376	325	431	1,057	32.6	2.45Times	-	-
2. Investment Value	54,896	59,583	59,688	209,003	0.2	3.50Times	-	-
3. (2/1)	146	183	138	198	-24.6	43.5		
4. Registered Capital	12,240	14,997	15,804	57,189	5.4	3.62Times	(100.0)	
Thailand	8,147	10,148	10,962	31,954	8.0	2.91Times	55.9	
Foreign Countries	4,093	4,849	4,842	25,235	-0.0	5.21Times	(100.0)	
Japan	1,199	443	1,690	9,386	3.81Times	5.55Times	37.2	
Taiwan	305	445	602	2,074	35.3	3.45Times	8.2	
U.S.	427	2,732	546	1,870	-80.0	3.42Times	7.4	
U.K.	390	112	193	233	72.3	20.7Times	0.9	
India	128	15	129	848	8.60Times	6.57Times	3.4	
Australia	127	36	100	843	2.78Times	8.43Times	3.3	
West Germany	141	9	98	75	10.89Times	-23.5	0.3	
Hong Kong	249	183	87	851	-52.5	9.78Times	3.4	
Malaysia	196	284	58	101	-79.6	74.1	0.4	
Singapore	306	27	34	602	25.9	17.7Times	2.4	
Netherlands	17	0	5	77	-	15.4Times	0.3	
South Korea	4	28	3	426	-89.3	142Times	1.7	
Others	604	535	1,297	7,849	2.42Times	6.05Times	31.1	
5. Machinery and Equipment Value	24,381	22,603	25,019	113,882	10.7	4.55Times		
6. No. of Thais employed	118,774	76,420	100,681	332,409	31.7	3.30Times		

Source: BOI Monthly Report, December 1987

Note: Order is order of registered capital in value in 1986.

**Table I-6. Number of Japanese Investment Projects Classified
by Type of Industry**

	(Approval Base)		
	1986	1987	Total
Food Processing	4	7	11
Chemical Products	2	10	12
Metal Fabrication	3	12	15
Electrical Appliance Parts	4	32	36
Machinery	8	21	29
Transportation Parts	(7)	(17)	(24)
Other Machinery	(1)	(1)	(5)
Medical Equipment	1	-	1
Precision Equipment	1	1	2
Optical Equipment	1	-	1
Textiles	2	14	16
Construction Materials	-	3	3
Wood Products	4	3	7
Others	-	27	27
TOTAL	30	130	160
	[20]	[100]	[120] 75%

Note: Figure in [] indicates number of Japanese investment projects oriented to export (export ratio not less than 80%)

Source: BOI

The BOI frequently makes changes in the system so as to promote foreign investment. Since the latter half of 1986, it has established the "Committee on Acceleration of Investment, set up a Japan Desk, lowered the required minimum size of investments in export oriented enterprises, lowered the requisite export ratio for sole investment by foreign capital, and streamlined the import duty exemption procedures.

In September 1987, to promote investment in the regional areas, Thailand designated all provinces as regions for promotion of investment as opposed to the old limited number of provinces covered. It divided these into three zones and applied different privileges to each. As a result, regional projects are given more privileges than in the past, while those in the metropolitan region and its environs are placed at a large disadvantage as compared with when locating in a regional area except when meeting conditions of export orientation, large employment, location in an industrial estate, etc.

(3) State of Infrastructure

A look at the industrial estates shows the state constructing five general industrial estates and three export processing zones. The construction and operation of industrial estates is primarily the business of the Industrial Estate Authority of Thailand. At the present time, the Lat-Krabang Industrial Estate is enjoying brisk activity, with all of its sites being sold. On the other hand, the Lamphun Estate, which is located in a regional area (Chiangmai), has a low occupancy rate.

Thailand plans to newly establish or enlarge industrial estates at Laem Chabang, Mab Ta Put, and five other locations.

Private developers have built large industrial estates in three locations. Among these, Japanese firms are investing heavily in the Nava Nakorn Estate.

The main trade ports of Thailand are Bangkok's Krung Toi port and Satahip port of Chon Buri province. Krung Toi is used most due to its location in the Bangkok metropolitan region, where factories concentrate. With the increase in exports and imports after the yen appreciation, the limitations in the port facilities have resulted in confusion and congestion.

Satahip is far from the industrial areas, so is not used that much.

As an alternative to Krung Toi port, for which expansion of facilities would be difficult, it is planned to construct a port at Laem Chabang. Various problems have arisen in the capacity of Krung Toi, so it is hoped that Laem Chabang port will be quickly built and equipped.

(4) State of Corporate Investment from Japan

Applications to the BOI for investment by Japanese affiliated companies rose to 54 cases in 1986 from the 30 cases of 1985, but shot up further to 204 cases in 1987. From January to March 1988 alone, there were 80 such applications.

A majority of the investments from Japan are export oriented, considerably different from the previous investment in import substitution industries. By industry, there are many investments in electrical and electronic equipment, transport machinery and related parts, metal products, and textiles, followed by agricultural produce and food processing - a great diversity of industries. Seen by size, there are large projects, such as in the electrical and electronics industry, employing over 1,000 workers, and also considerable medium and small sized investments.

(5) Foreign Investment Policies of the Other Countries

South Korea established its first foreign capital law in 1960, wherein it sought to introduce foreign capital through loans rather than direct investment. In a new law established in the middle of the 1960s, however, it showed a new stance of encouraging direct investment. In the 1970s, it shifted to a strongly selective and restrictive policy so as to protect growing indigenous businesses, but has been relaxing its controls in the 1980s.

Taiwan established an investment promotion law and technical introduction law in the early 1960s and secured an influx of foreign capital under the same. In 1965, it set up export processing zones, providing greater privileges to foreign capital but strengthening the export obligations. The new technology which flowed into the region along with the capital led to the growth of the electrical and electronics industry into a second export industry.

Japan established a law on foreign capital in the 1950s, which was used as the guideline for introduction of foreign capital. From the viewpoint of the growth of domestic industry, however, it imposed considerable restrictions under the law. In particular, this had the effect of holding down the value of payments for overseas technology. This foreign investment policy was gradually relaxed after 1956 and was completely liberalized by 1973.

II. MOLD AND DIE INDUSTRY

II. The Mold and Die Industry Today and Problems

1. Outline

(1) Characteristics of the Mold and Die Industry

Molds and dies are metal tools which are indispensable in mass production for forming raw materials such as metals, plastics, rubber and glass etc. into fixed shapes without recourse to machining. They are used in the production of an extremely wide range of manufactured goods which includes machinery and equipment such as automobiles, electric, office and optical machinery and equipment, glass containers and toys. The mold and die industry therefore forms the backbone of every industry and can also be said to influence the future development of those industries.

(2) Position of the Thai Mold and Die Industry

At the present time there are no government policies which apply specifically to the mold and die industry in Thailand. However, the government attaches great importance to the industry as a supporting industry which is vital to the country's export industries. The metal processing industry has been made a priority industry along with the agricultural industry, regional industries and medium and small-scale manufacturers under the Sixth National Economic and Social Development Plan (1987-1991). Since May 1985 the Board of Investment (BOI) has recognized cases of investment related to molds and dies as being eligible for investment incentives.

Accompanying the development of industries within Thailand, such as the automobile and motorcycle, electric and electronic machinery and equipment and daily sundry goods and toy industries, demand for molds and dies have been yearly increasing. However, due to the inability of the domestic mold and die industry to meet this growing demand there has been an increasing reliance upon imports.

According to data for 1985 compiled by the Thai Ministry of Industry, throughout the whole of the country there were 1,454 factories in the plastics industry which made frequent use of molds and dies, 905 in the electric machinery and equipment industry, 2,233 in the transportation machinery and equipment industry and 5,066 in the machining industry. On top of this, the electric and electronic machinery and equipment industry consists of more than 300 companies, 50 of which are large-scale with the remaining 250 being medium and small in size. There are approximately 120 manufacturers related to the automobile industry.

(3) Trends of Japanese Companies

Among Japanese home appliance and automobile parts manufacturing companies there are a number which produce their own molds and dies in-house. Starting in 1987 there has been a succession of incidences of Japanese companies in Thailand producing molds and dies.

For example, Nippondenso has established a joint venture company to manufacture molds and dies. The company produces three types of molds, those for use in cold forging, die casting and sheet iron pressing, and plans to export some of the company's products to Japan. Stanley Electric has built a mold and die factory by investing about ¥400 million in a subsidiary company of a Thai corporation. Toyota Auto Body has begun to import molds and dies from Thailand and plans to build a production base in Thailand in the future for press molds and is also providing technical guidance to affiliated manufacturers.

Such activities by Japanese companies in Thailand are the result of two main factors: 1. production costs in Thailand are 20-30% lower than in Japan; and 2. the level of technology for mold and die production is improving.

2. The Mold and Die Industry Today

(1) Number of Companies

As of 1985, 330 mold and die manufacturers are registered with the Ministry of Industry. On the basis of such registrations the number of companies has been increasing at an annual rate of 10%, with 31 more companies registering in 1984 and 30 more in 1985. If this rate of increase will be maintained, it would mean that as of this year (1988) there would be 440 companies. Most of the mold and die manufacturers are located either in Bangkok or in its surrounding districts.

(2) State of the Industry

According to a survey undertaken of 60 companies located in and around Bangkok in 1987 by MIDI (Metal-Working and Machinery Industries Development Institute) the situation of the mold and die industry today is as follows:

- [1] There is a relatively large number of new companies within the industry as only about 35% of companies have been operating for between 6-10 years;
- [2] Out of the 60 companies surveyed, 42% of manufacturers molds for metal processing and 60% for plastics;

- [3] As for the type of companies, 33% are owned by individuals, 26% are limited companies, and 7% are joint ventures with overseas companies. At 55% of the companies the owner is directly involved in manufacture;
- [4] 60% of the companies have not more than 10 workers in their employment as 13.3% employ between 1-4 workers and 46.7% employ between 5-10. The average number of employees for the 60 companies is 12.

(3) Export and Import of Molds and Dies

Today, the bulk of molds and dies imported into Thailand are either large, complicated or high precision molds and dies. Meanwhile, a steady increase is being recorded in export. One of the factors behind this increase in export is that many of the overseas parent companies of automotive parts, motorcycle and home appliance manufacturers have incorporated supply from their Thai subsidiaries to neighboring Asian countries in their mold and die demand and supply strategies for the Southeast Asian region.

[1] Imports: 595,305,000 bahts (1986)

(imported mainly from Japan)

[2] Exports: 76,890,052 bahts (1986)

(exported mainly to Malaysia, Indonesia, Singapore)

3. Results of the Survey Conducted in Thailand

For the first survey, interviews and on-the-spot surveys were carried out with 42 mold and die and related factories, 7 groups and educational facilities, and 5 government offices, making a total of 54 different places. Then second survey involved the same interviews and on-the-spot surveys covering 6 mold and die and related factories, 1 educational facility and 5 government offices, making a total of 12 places.

The mold and die factories surveyed as part of the on-the-spot surveys can be classified into 4 broad categories. The first group consists of the mold and die factories of large companies and the in-house production divisions of foreign capital companies, the second consists of factories which have close ties with large companies or foreign capital companies which use molds and dies, the third consists of factories belonging to Thai companies which produce molds and dies ranging in quality from medium grade to high grade by using engineering design and production, and the fourth consists of local companies which manufacture molds and dies through a combination of experience and sense and which produce copied products. Representative examples from these 4 groups are shown below:

(1) First Group

[1] Japan-Thai Joint Venture, A Company

The company is an affiliate of a Japanese electric appliance company. Operations commenced in 1960 and annual turnover is 15 million bahts. The company employs 1,500 staff, 12 of them are Japanese.

The company manufactures color televisions, dry batteries, storage batteries for automobiles, car stereos, fans, etc. A total of 28 engineers and workers are engaged in the mold and die factory. The machinery and equipment used are 6 milling machines (one of which is a profile), 2 EDMs, 1 wire cut EDM, 1 setting machine and 1 lathe. The basic plans for the products are made in Japan and on the basis of these, plans are made for molds and dies in Thailand which are suited to the situation there. There are plans to introduce CAD/CAM within the next 2 to 3 years. Although the person who conducted the tour through the factory said that the processes from design through to manufacture have finally caught up to the standards achieved in South Korea and Taiwan, the finished molds looked just the same as those in Japan.

[2] Japanese-Thai Joint Venture, B Company

The company was established in 1962 and 65% of the total equity is held by Japanese and the remaining 35% by Thai interests. As of March 1988 the company employed 1,212 workers (690 of whom are involved in the factory). As for annual sales, 20,905 units were sold in 1986 and the estimate for 1988 is in excess of 30,000 units.

There are 20 workers and engineers involved in the mold and die factory. The machinery and equipment which are used are 1 copy milling machine, 1 vertical milling machine, 1 lathe, 1 shaper, 1 vertical boring machine, and 1 setting machine. Most parts are produced by molding contractors and molds are made for odd shaped molds by using gypsum models which are supplied by the company in Japan. Though the manufacture of molds is labor intensive, there are no problems as far as quality is concerned.

(2) Second Group

[1] Local Automotive Parts Manufacturer, C Company

The company was established in 1959. It produces automotive parts and car bodies and has a work force of 1,000. There are 300 engineers and workers who are involved in mold and die production. Out of this number there are 5 engineers (university graduates) and 10 draftsmen. The Japanese company has undertaken the training of these workers itself. Workers have been with the

company for between 2-7 years. Due to recent moves by overseas companies to set up operations in Thailand job hopping has become somewhat of a problem.

The molds that it manufactures are for making panels for automobiles. Production volume is on the C scale - on a scale of the three categories of A (large), B (medium) C (small) - and 24 units are produced per month. The company's main customers are Japanese, American, and European affiliates. For finishing the method of using many workers is adopted.

With its elementary engineering books, QC circles, employees and remuneration system the company is rather similar to Japanese companies.

[2] Local Motorcycle Parts Manufacturer, D Company

The company manufactures parts for automobiles and motorcycles. It supplies 80% of its products to one Japanese affiliate and the remaining 20% consists of parts supplied to other companies and also plastic containers. A total of 496 workers are employed by the company.

61 employees are involved in mold and die related work, 6 of whom are designers. The machinery and equipment at the repair plant consists of 1 lathe and 2 vertical milling machines, and at the new manufacturing plant 3 lathes, 9 vertical milling machines, 2 copy milling machines, 2 EDMs, 3 shapers, 1 drilling machine, 1 surface grinder and 1 setting machine. There are mainly vertical milling machines in the mold and die plant, all of which are digital. (This was the only such case encountered in the course of the on-the-spot survey.) There are relatively few edges in the case of injection molding goods. However, the cooling system is not good and there is the problem of the small number of shots. There is plenty of room for improvements to be made in regard to the design and quality control of molds and dies. The company's stance concerning joint ventures with overseas countries was positive.

(3) Third Group

[1] Local Mold & Die Manufacturer, E Company

Established in 1985 it manufactures precision molds of use in IC parts. The work force consists of an engineering manager and 2 designers-cum-draftsmen (basic design, however, is carried out by the president), and the company's standard practice is to rely on models provided by customers. Inspection is carried out by both the company and its customers. The layout of the processes was thought out by the engineering manager and the president, but in actual fact it is a case of trial and error and advice is often sought from a university

professor. There has also been an instance of inviting an engineer from Singapore to provide guidance.

The operator of the company is a graduate of the King Mongkut Science University and has a basic engineering knowledge of design and manufacture. He also shows a strong interest in intellectual matters. He belongs to the new breed of operators of mold and die manufacturing companies in Thailand.

[2] Local Mold & Die Manufacturer, F Company

Established in 1984 it has a registered capital of 1.0 million bahts (its assets are currently worth 10.0 million bahts), and in 1987 it recorded an annual turnover of 10.0 million bahts. The company is run by the president who used to work for the U.S. Semiconductor Company and who is also a graduate from the engineering department of Chulalongkorn University.

The company carries a work force of 64 and the majority of those who work in the manufacturing division are high school graduates. Machinery and equipment consists of 9 grinders, 1 EDM, 4 milling machines, and there is also a Japanese-made tool microscope.

Processing to a direct line precision of $\pm 0.005\text{mm}$ is possible. The company can be expected to develop provided that appropriate guidance is given from outside.

(4) Fourth Group

[1] Local Mold & Die Manufacturer, G Company

The company manufactures molds and dies on the basis of EDM processing. It employs about 10 workers (the number varies daily due to the daily wage system it has adopted). The company is run by one man, the president, who sees to all aspects of operations. No account ledgers are kept. Technical decisions are made on the basis of the president's own experience. Maintenance is not carried out for the processing machines and measuring instruments (cleaning, however, is carried out). The president takes a negative attitude towards training his employees. Most delivery dates are not kept.

The president has absolute confidence in his own experience and is satisfied with the way things are run at the moment. The impression received was that business is quite good. In Thailand today there is a high demand for molds and dies and the company is considering expansion.

[2] Local Mold & Die Manufacturer, H Company

Established in 1987 the company is run by one person and employs 12 workers. Though skilled workers are necessary, a negative attitude is taken

towards the employment of university graduates because it is believed that they cannot be used constructively. Also, the company's employees are unreliable as they often take days off without permission. The operator is contemplating reducing the scale of his company's operations.

The experience of the president is relied upon for manufacturing methods. Processing is undertaken on the basis of products or product plans and there are no plans for molds. Skill is relied upon for mold and die processing and rather than using high precision machinery. The method of using a number of workers is adopted.

4. Industries of Competing Countries

(1) Mold and Die Industries in Major Countries

According to a publication put out by the ISTA (note 1), the total value of production for the 15 member nations (note 2) in 1986 was approximately ¥2.0 trillion. Divided into individual countries, The United States was the largest producer with ¥940.8 billion which comprised 47% of the total, Japan followed in second place with ¥375.4 billion or 18.9%, West Germany was third with ¥208.5 billion or 10.5%; and they were followed by Italy and France in this order. These 5 countries accounted for 84.4% of total production.

Production values for the various types of molds and dies show that molds for punching and pressing form the largest group, followed by molds for plastic and rubber, standard tool parts for jig fixtures, and molds for die casting in this order. Exports from the member nations of the ISTA were worth a total of ¥383.0 billion. Japan was the largest exporter with ¥109.7 billion (a 70.1% increase over that for 1983), West Germany was in second place with ¥68.7 billion (a 3.3% decrease), and the United States followed in third place with ¥40.6 billion (a 8.3% decrease).

(Note 1) International Special Tooling Association

(Note 2) USA, Japan, West Germany, Italy, France, Great Britain, Spain, Netherlands, Canada, Belgium, Finland, Portugal, Sweden and Denmark.

(2) The Mold and Die Industries in the Asian NIEs

Over recent years the mold and die industries of Asian NIEs have continued to expand at a significant rate.

In 1984 mold and die exports from South Korea were worth \$16.9 million, which represented a 13.9% increase over the previous year. Whereas in the 1970s there were

only about 350 mold and die manufacturers, after overcoming the slump during the early half of 1980 there were 800 companies, and by the end of 1985 this number had increased to 1,200. 82% of these companies are small in scale and employ less than 20 employees.

Molds for plastic and rubber accounted for 46.8% of the total export amount. The major country of export destination is Japan.

The processing precision of South Korean molds and dies is one decimal point below that of Japan and durability is about half of the Japanese level. Also, appearance and surface treatment is of a lower standard than that found in Japan. In order to do something about this lagging behind in the area of technology, the Industry Promotion Agency came up with a plan for developing technology for basic production in June 1987. The plan included the following items:

- (a) A system for grading factories;
- (b) Assistance to healthy companies;
- (c) Creation of separate estates for different technological areas;
- (d) Assistance in taxation and finance;
- (e) Training of technical experts and skilled workers;
- (f) Technological development;
- (g) Free use of and help with testing equipment.

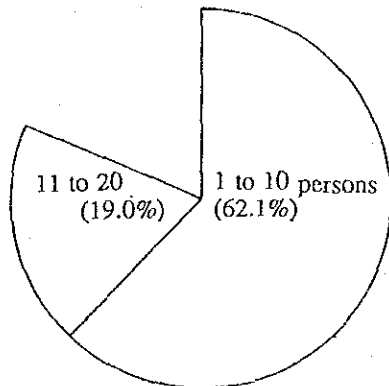
The production value of molds and dies in Taiwan increased from 5.0 billion yuan in 1981 to 15.0 billion yuan in 1986, representing a 300% increase over the intervening five-year period. This has accompanied the tremendous rate of development of the electronics industry.

As for its export markets, exports have increased to the United States and, as a result of the appreciation of the yen, to Japan as well. During the period from January through October 1987 exports to these two countries comprised 40% of total exports.

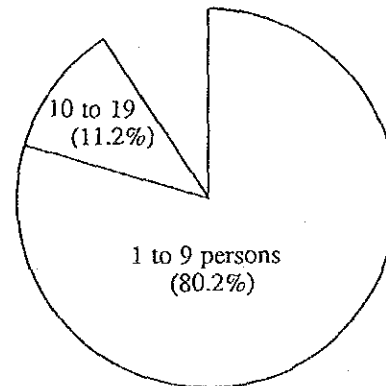
The mold and die industry in Taiwan got away to a slow start, and it was not until 1964 that the full-scale mold and die manufacturers started appearing. In 1987 there were about 2,000 manufacturing companies, the majority of which were small in scale. Among the 525 companies which specialize in the manufacture of molds and dies, 200 have a capital of less than 50,000 yuan, and only 5% are capitalized at more than 10 million yuan. Although in the case of the Taiwanese mold and die industry the scale is small, this is more than compensated by the relatively high level of technical capacity.

Although the Hong Kong mold and die industry is an industry which is dependent on domestic demand, exports are increasing. In 1986 exports were worth HK\$69.50 million, or a 46% increase over the previous year. Production for domestic use was worth

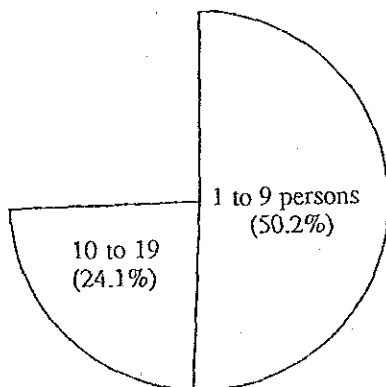
Chart II-I. Percent Share of Small-Size Mold and Die Companies



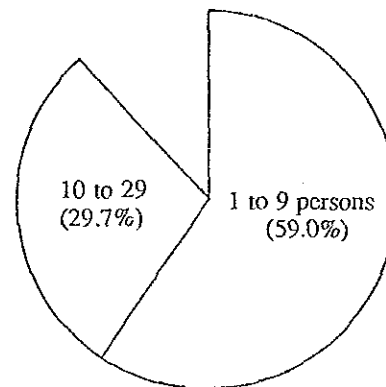
Thai Mold and Die Industry
(1987 MIDI survey of 58 companies)



Japanese Mold and Die Industry
(1987 Japand Mold and Die Manufacturers Association material on 11,923 business establishments)



South Korean Mold and Die Industry
(Korean Mold and Die Industry Review 1987 covering 1,055 companies)



Taiwan Mold and Die Industry
(Exchange Association, "Mold and Die Industry in Taiwan 1982," 525 companies)

HK\$500 million in 1981, and by 1986 it was worth HK\$1.5 billion. This increase represents an annual increase of 24.6% during the intervening period.

There are approximately 1,000 specialist mold and die manufacturers and overall there are 2,000 manufacturers involved in mold and die production. 70% of factories employ less than 10 workers, and only 20% of the total employ more than 50 employees.

Though Hong Kong manufacturers of molds and dies used to be conservative in regard to technology, since the beginning of the 1980s they have been introducing new technology and device, albeit at a slow pace.

Since the value of Singapore's exports of molds and dies increased from S\$44.65 million in 1984 to S\$61.18 million in 1985, or an increase of 37%, annual exports have been worth slightly over the S\$60.0 million mark.

Exports of dies for use in machine tools are destined mainly for Thailand, Japan, Malaysia and the United States, and molds for metal casting are exported to Malaysia, Japan, Hong Kong, India, Thailand and the U.S.

It is estimated that there are between 400-500 mold and die manufacturers. Although a good range of machinery and equipment is used, there is the problem of inconsistent experience and technology levels from manufacturer to manufacturer. The government and the Economic Development Agency are putting considerable effort into promoting the mold and die industry by establishing various kinds of training centers.

Though the development of the mold and die industries as supporting industries in the various NIEs has been striking, such progress has been supported largely by small-scale manufacturers. A comparison with the world's major mold and die producing nations reveals that they still lag considerably behind in regard to experience, technology and equipment. They also lack information related to international mold and die production and have few sources for obtaining such information.

The governments of the various countries have put out industry promotion policies, and while providing greater assistance in regard to finance and taxation and the fostering of technicians, they have also been formulating policies aimed specifically at the mold and die industry.

5. Problems and Countermeasures

(1) (Problem) Lack of Organization within the Industry

- [1] It is important that the modernization of management and the improvement in technical levels in the mold and die industry be carried out through associations formed between manufacturers and users. As a supporting

industry for mass production industries it is vital that the mold and die manufacturers have links with their customers.

- [2] But despite this, it is the practice of Thai mold and die manufacturers not to carry out business activities, and instead to wait until users contact them. It is no exaggeration to say that as a result they have no knowledge of the user market. Also, it was learnt in the course of the interviews that the manufacturers do not exchange opinions relating to business and technology.
- [3] One reason for this is that the mold and die industry is a seller's market as it is swamped with many orders, and so there has been no need to undertake activities aimed at increasing business. However, the rapid increase in investment from overseas which has been, and is, continuing to take place in Thailand has seen some manufacturers change their attitudes and make improvements in technology and increase the extent of contact with the market in response to requests from users among overseas companies operating in the country.
- [4] Amidst such trends calls are starting to be heard from within the industry for the establishment of a mold and die industry association which would facilitate an exchange of opinions on the topics of technology, types of machinery, the market, etc. MIDI is currently examining setting up an industry organization which would serve as a channel for information.

(Countermeasures) Developing an Industry Organization

As it would prove difficult for the organization of the industry to be carried out at just the industry level, assistance from the government is also required.

The possible functions and composition of groups are set out below:

- The establishment of an office within MIDI to produce a publication which would contain articles on domestic and overseas technology, markets and business. (This would be done as a starting point for the formation of an industry group.)
- Assistance with information, the setting of targets aimed at technical levels for the industry, and the implementation of various sorts of training carried out by an industry organization.
- Manufacturers are very keen to purchase expensive machinery such as EDMs. However, if one takes the amount of use into account such machines would not always be very cost effective. Therefore, efforts should

be made to promote the joint purchase and joint use of expensive machinery.

- Due to the occasion of the Trade Conference by Commodities (Mold and Die) which is to be held in Singapore in October 1988 the Japan Mold and Die Industry Association is planning to seek the formation of an organization to link its association with those of Indonesia, Singapore, Malaysia, the Philippines, Thailand and Hong Kong. The objectives of the organization are to provide information, resolve problems, and to involve itself with the resolutions of the ISTA.

(2) (Problem) Lagging behind in Management and Technology and Insufficient Information

- [1] The majority of companies are not accustomed to management systems based upon calculations. Because molds and dies are manufactured products which have a high added value, it is all the more necessary to guarantee company profits by following quantitative, and also legitimate criteria to attain that added value, and to renew calculations which form the basis of control at regular intervals. In order to do this, it is necessary to grasp and accumulate data related to average stock volumes, development expenses, the cost of depreciation of indirectly related divisions, and to analyse the work of employees engaged in directly related divisions and also the operation of machinery and equipment. An understanding of the company itself is also required along with the accumulation of such data to enable the setting of costs for each individual order received.
- [2] There are very few companies which carry out sales activities. This is attributed to brisk business for mold and die manufacturers and the fact that it is a seller's market. However, the lack of sales activities make it impossible to recognize the significance of materials, required durability, precision and the use of product images, and make it difficult to increase the scope of design and manufacture. It also means that the manufacturers themselves are cutting off a means of obtaining market information.
- [3] There is little interest in obtaining information. It is rare for manufacturers to show an interest in information on general technology, market and demand estimates and standardization.

(Countermeasures) Improving Management and Technology and the Provision of Information

Business management based on calculations and the accumulation of information are indispensable in the modernization of business. As long as a company's accounts are the same as household accounts and only sense and experience are relied upon, there is little hope of improving or developing business. As possible means of solving this the following activities could be carried out by the government or industry groups. (These can also be applied to quite large manufacturers.)

- The collection of data and information and improving services for the provision of such information;
- Increasing and improving business consulting, and training for managers;
- Holding seminars on the various types of technology;
- Inviting experts to provide technical guidance and training for private companies;
- Inviting overseas manufacturers to Thailand and promoting the formation of joint ventures.

(3) (Problem) Shortage of Technical Experts

The weak industrial base which is the result as well as part of the process of industrial development in Thailand has meant that companies have not produced adequate numbers of technicians and skilled workers, with the result that there are many manufacturers of molds and dies which rely on experience alone. As well as there being few companies which carry out production and design based on engineering knowledge, the level of this for those that do manage to do this is not high.

The situations of the respective occupations are described below:

- [1] There are few companies which use design divisions and the majority of companies do not employ draftsmen. An overwhelming number of company operators have a low level of appreciation of the importance of having designers within their own companies. Even though it may not apply in the case of product plans, there are many companies which cannot adequately draw plans for molds and dies, and more than half the companies rely on plans supplied by their customers. There are many cases where design and drafting are confused. The design of molds and dies is a comprehensive engineering technology for metal processing, molding and mass production which is based on dynamics, material engineering, mechanical science and measurement engineering. There are, however, few companies which understand this. There were more than a few

operators who were under the misunderstanding that by introducing CAM/CAM they would be able to undertake design straight away.

- [2] Regardless of whether they are full-time or part-time it is difficult to distinguish which employees are in charge of production management.
- [3] Though the percent of companies who have quality control supervisors is increasing, basically, manufacturers have not yet graduated from the stage of guaranteeing rudimentary quality by carrying out inspections at the final stage of production.
- [4] In order to become a competent mold and die worker in Japan, it is said that one must graduate from an industrial high school and then accumulate ten years of experience. However, the majority of mold and die workers in Thailand have less than five years' experience and for most of them their highest educational qualification is graduation from middle school. As a result, it is thought that they do not acquire basic engineering knowledge.

(Countermeasures) Retraining and Fostering Technical Experts and Skilled Workers

As well as being a labor-intensive industry the modern mold and die industry is a technology-intensive industry with a high ratio of machinery and equipment. If the level of the Thai mold and die industry is to be raised, it is necessary to foster and carry out the continual training and education of technicians who are backed up by engineering knowledge. Possible measures to achieve this are listed below:

- Increase engineering courses at universities
- Increase mold and die courses at industrial high schools and vocational training centers
- Expand the function of occupational training, re-educate skilled workers, and foster training instructors
- A certification system for workers who have undergone training
- Increase technical standards and control standards
- Hold seminars and short courses on the various forms of technology and technical management
- Joint research and development between training facilities and educational facilities such as universities and junior colleges (there is a considerable lack of horizontal ties in Thailand)
- Guidance given by technical consultants dispatched to factories (because many of the medium and small manufacturers are suspicious of the government and also lack engineering knowledge, on the job training and on the job consultancy would prove effective)

- Invite experts and consultants
- Translation of materials for training and technical education and manuals and ensuring that they are widely used by medium and small-scale companies.

(4) (Problem) Old Machinery and Equipment and Insufficient Understanding of Machinery and Equipment

- [1] Lathes and shapers are mainly used as the means for the machining molds and dies and most of them are old and also second hand.
- [2] Although an increasing number of milling machines are being used and they have become the main piece of processing equipment, many of them are old and the small radius of the spindle makes them unsuited for heavy machining. Also, most of them are operated manually. Although some have profile functions, there are very few which have the digital read-out or NC functions which are required in the next processing stage.
- [3] Despite the sharp increase in the number of companies using EDMs whereby it has become quite fashionable to use them, the overall ratio is low. The use of W/C EDMs could be said to be in the preliminary stage. There are also some who are under the impression that if they have an EDM they are able to undertake every sort of complicated process.
- [4] A mixture of old and new machinery is to be found in any one factory, and because processing precision is determined by the level of the old machinery, full use is not made of the capacity of new machinery.
- [5] Surface plates, fundamental in the machining process which affects measuring standards, are hardly to be found.
- [6] There is little appreciation of the precision of molds and dies, and as a result the importance of measuring instruments which are vital for improving quality is not understood. There is also little interest shown in investment.
- [7] A fair amount of mistakes are made in surface treatment (heat treatment and plating, etc) because the companies which undertake such processes have an insufficient understanding of the intentions of mold and die manufacturers and the materials used for molds and dies.

(Countermeasures) Replacement of old machinery and improved understanding of machinery and equipment.

Though there are various types of molds and dies, all of which have different requirements in regard to quality, the basic trend is towards high quality. In order to manufacture molds and dies which are high in quality it is essential to understand machinery, and in particular, the precision of machinery.

- Increasing technical education and training (the same applies to this as to the re-education and fostering of technicians and skilled workers in the previous section);
- The promotion of modern equipment through the supply of long-term low interest loans;
- Preferential measures for taxes and duties affecting the purchase of processing machinery and inspection and trial machinery and equipment;
- The joint purchase and joint use of expensive processing machinery, and inspection and trial machinery and equipment at an industry level, and also the establishment of joint factories.

Chart II-2. Development Process of Mold and Die Industry

--- In the Case of Taiwan & Korea ---

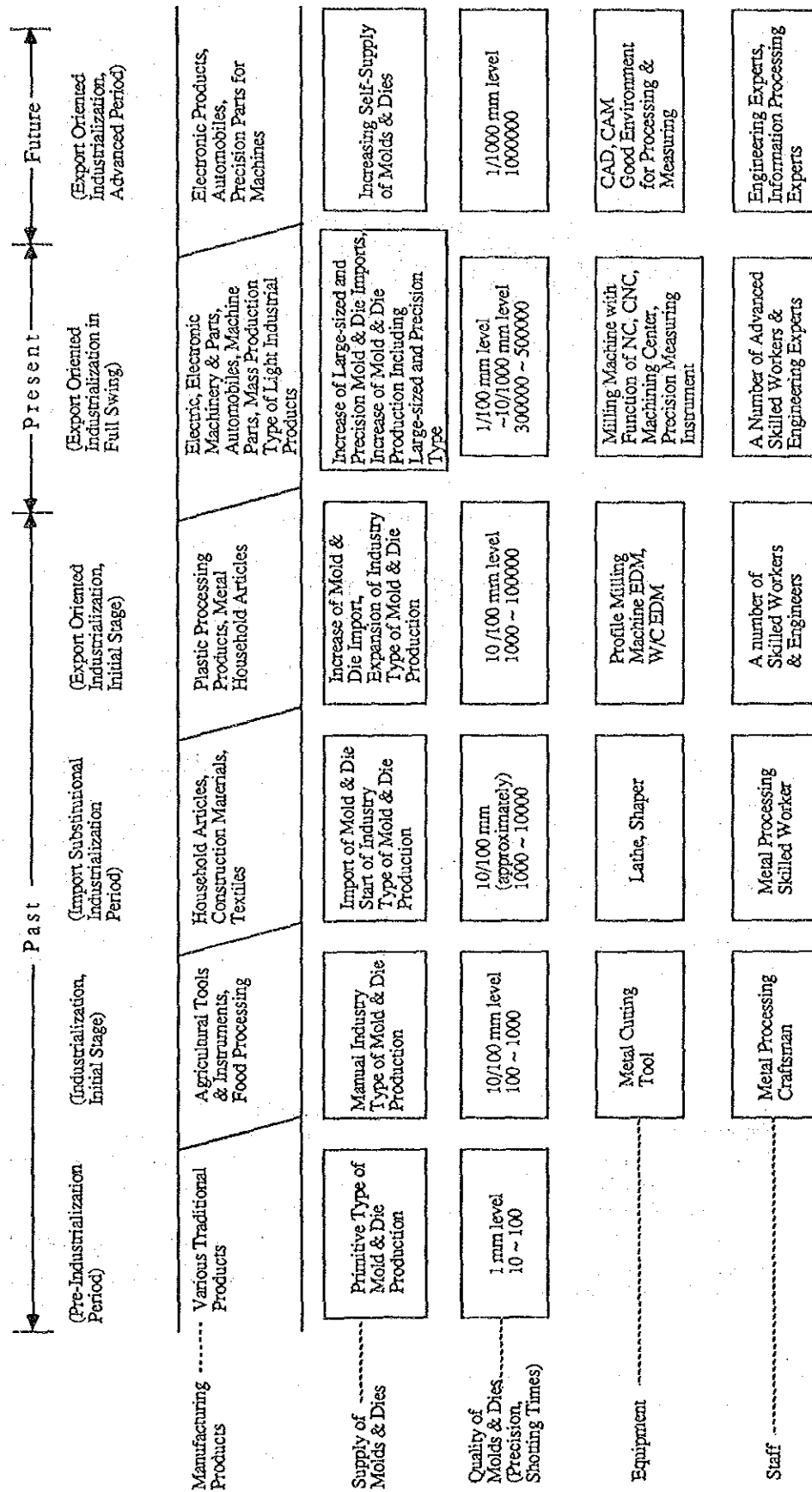


Chart II-3. Level of Industrial Development and Processing Precision of Mold and Die Industry

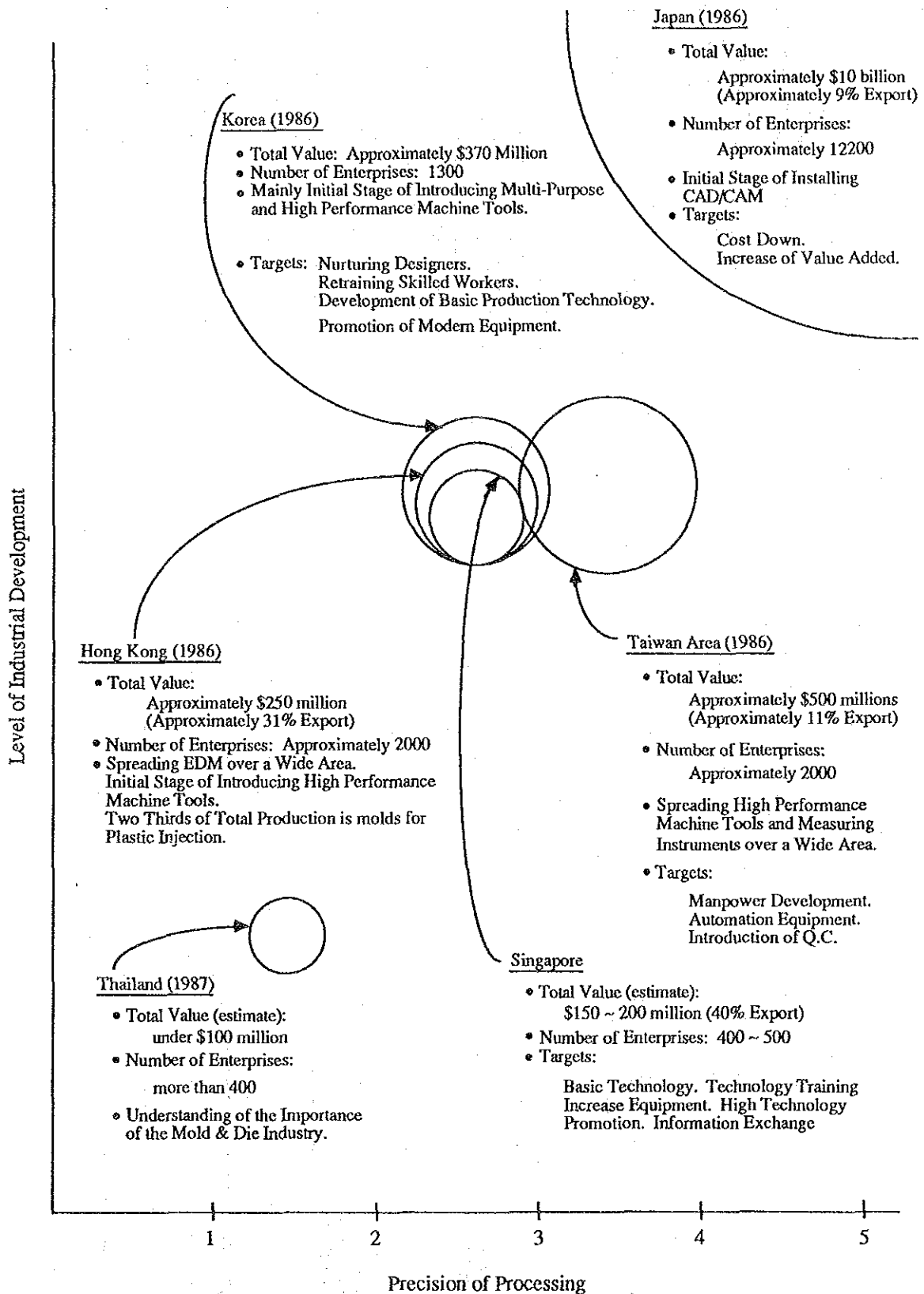


Chart II-4. Problems of Mold & Die Industry in Thailand

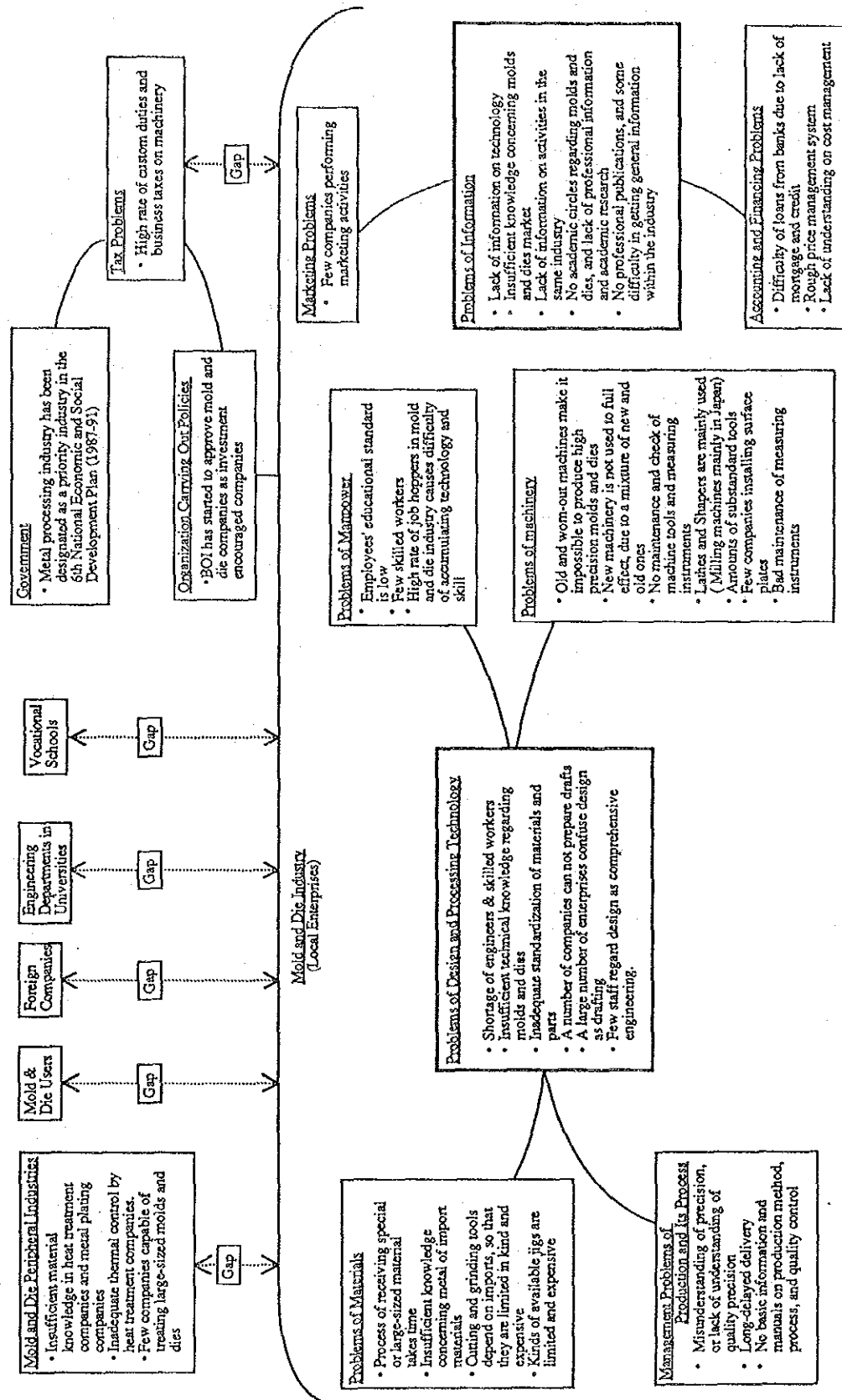
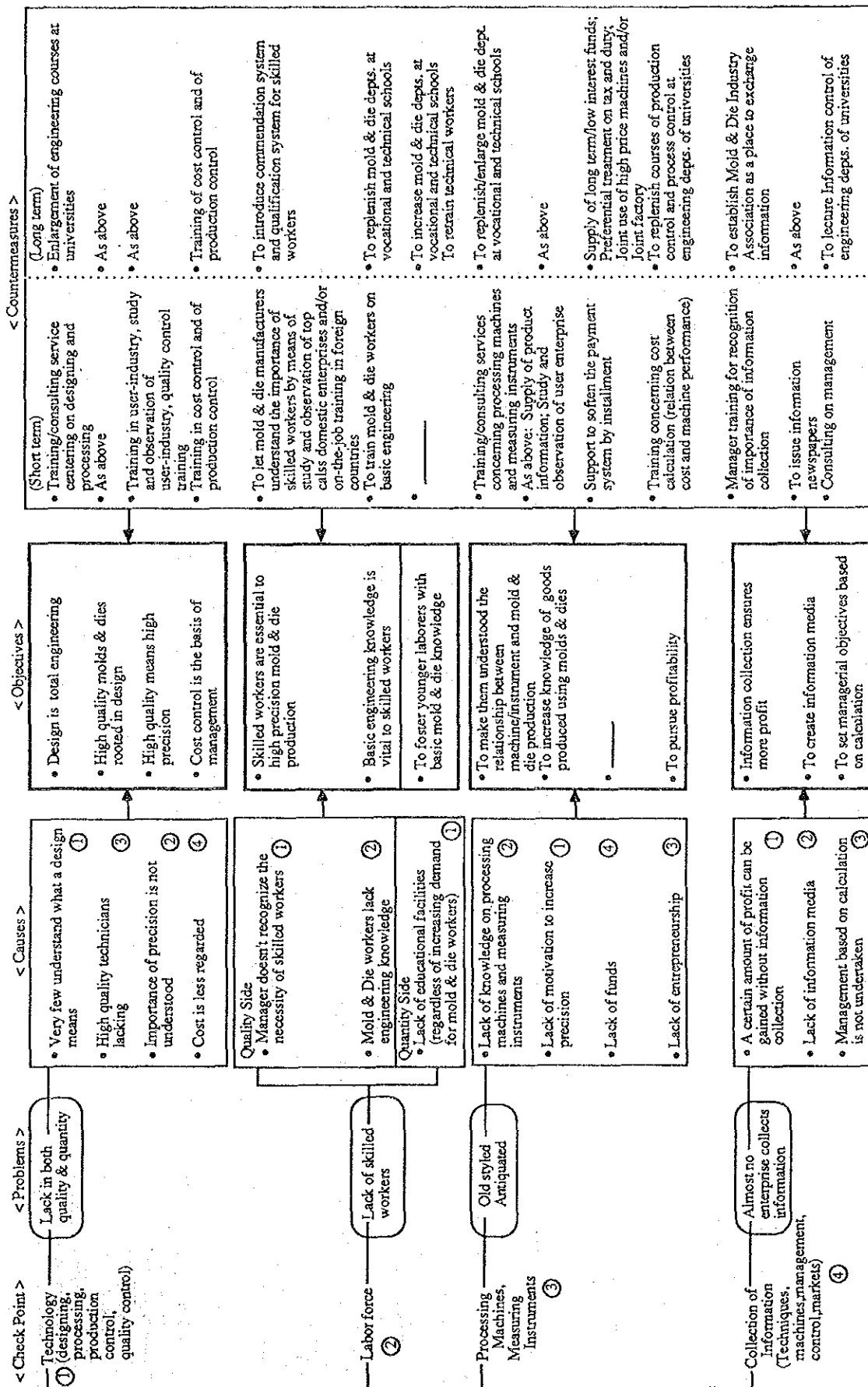
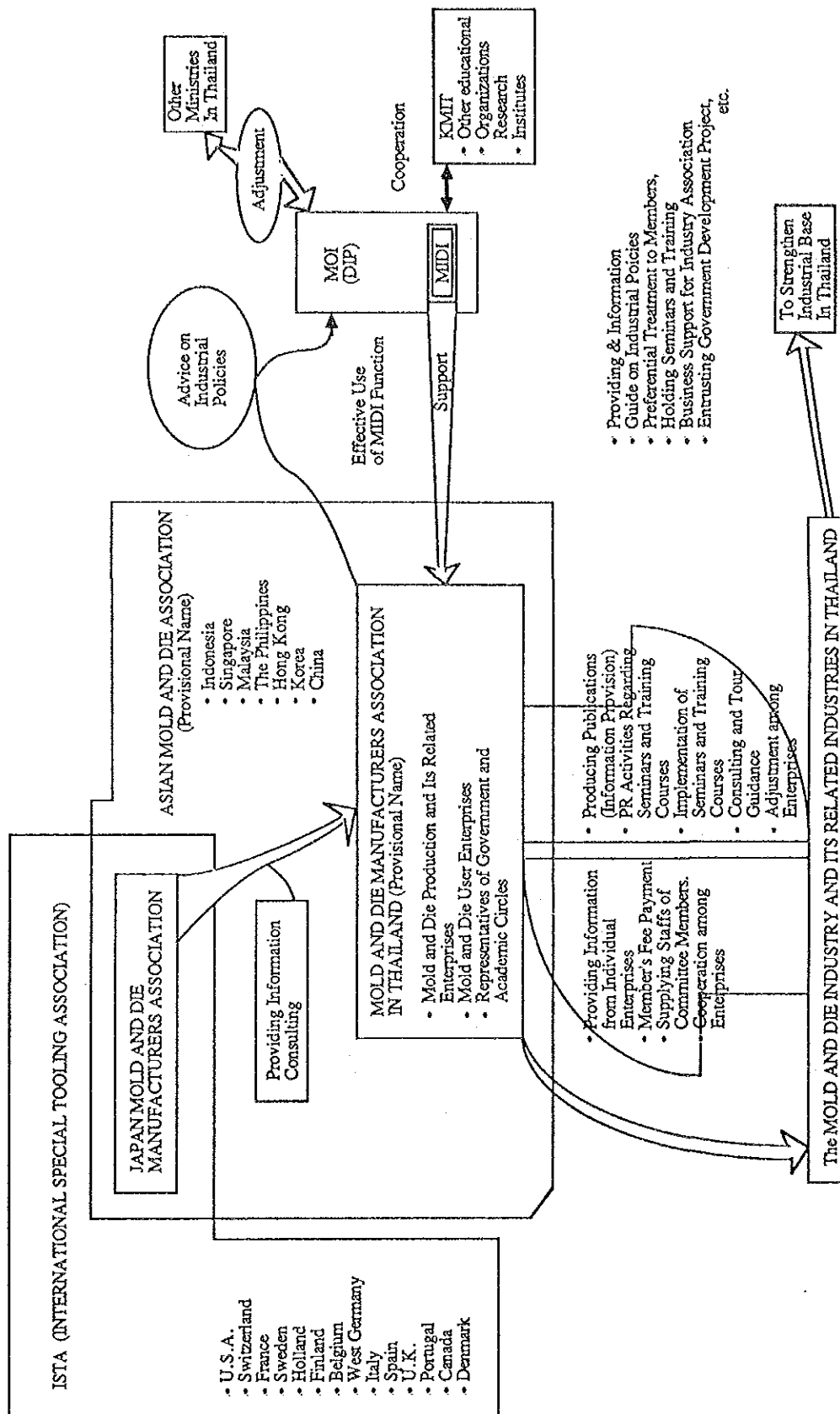


Chart II-5. Synopsis of Countermeasures for Mold & Die Industry



Remarks: ① ② ③ means order of importance.

Chart II-6. Roles of Mold and Die Manufacturers Association in Thailand (Provisional Name)



III. TOY INDUSTRY

III. The Toy Industry Today and Problems

1. Outline

(1) Industry Structure

It is estimated that there are about 200 toy manufacturing companies. Among the 44 companies which are registered with the BOI, 15 have actually commenced production. As a whole the industry can be divided into two groups: the few large companies and the many medium and small-scale companies. The three large manufacturers of plastic toys are Thai Toy, Imperial Thai Toy and Dynamic Toy, and these companies are mainly involved in OEM production. Joining these three Thai companies in the group of large companies are the Japanese companies Tomy and Banda & KC. As for metal toys, there is only one manufacturer, and that is the large Yat Ming Toys Factory which is a Hong Kong joint venture company. Of those producing stuffed toys, the Thai company H & B Intertext and the Japanese company First are the largest.

(2) Export and Imports of Toys and Production

Exports	Value	1985: 440 million bahts
		1986: 650 million bahts
		1987: 1.6 billion bahts
	Destination	United States (56 %)
		Great Britain (10 %)
		West Germany (8 %)
		Japan (5 %)
Imports	Value	1985: 140 million bahts
		1986: 140 million bahts

It is estimated that in 1987 the production of toys in Thailand was worth 1.8 billion bahts, more than 90% of which was produced for export. The size of the domestic toy market is estimated to be worth between 300-400 million bahts annually.

2. Toy Industry Today

Interview-surveys were conducted of a total 28 toy manufacturers which comprised of 14 plastic and metal toy companies, 6 wooden toy companies and 8 stuffed toy companies. The findings of the survey for the plastic toy manufacturers are outlined in Table III-1.

**Table III-1. Plastic Toy Manufacturers Classified
According to Scale and Characteristics**

	Large Companies	Medium Companies	Small Companies
Capital	More than 20 million bahts	5-20 million bahts	Less than 5 million bahts
Employees	More than 200 employees	50-200 employees	Less than 50 employees
Sales	More than 50 million bahts	10-50 million bahts	Less than 10 million bahts
Production Systems	Separate manufacturing processes, mass production system using an assembly line. Labor-intensive system which places emphasis on production efficiency rather than maintaining quality.	Not much separation of manufacturing processes and flow of many of the assembly lines is incomplete. Assembly processes are divided into parts and there is a heavy reliance on manual labor.	No correlation between manufacturing processes. Large quantities of parts are produced and assembly work is done intensively.
Quality Control	Quality of products is stable, but overall many finished products are quite rough. For inspections focus is on functions and breakage.	Finishing of parts and quality of processing are rough. Unevenness in assembly among production lots. Focus placed on functions.	Little attention paid to finishing of molding products. Assembly work done by machines only. Checks are carried out to test functions and find breakages but there is a high rate of sub-standard goods.
Product Standard	Most products are OEM products for large overseas companies. Few have difficult functions. Products for medium range of the infant to 10 year-old market.	OEM products for overseas are medium to low level. Most are play toys and games for infant to 12-13 year-old market.	Most products are cheap and of a low standard. Many are play toys such as water pistols.

Among stuffed toy manufacturers there are only a few companies employing more than 200 workers which are constantly involved in exporting. While most of the other stuffed toy manufacturers would like to enter the export market, at the present time they are unable to break away from their pattern of producing mainly for the domestic market.

As for metal toy there is only one company, and one more under contemplation.

3. Markets of Third Countries

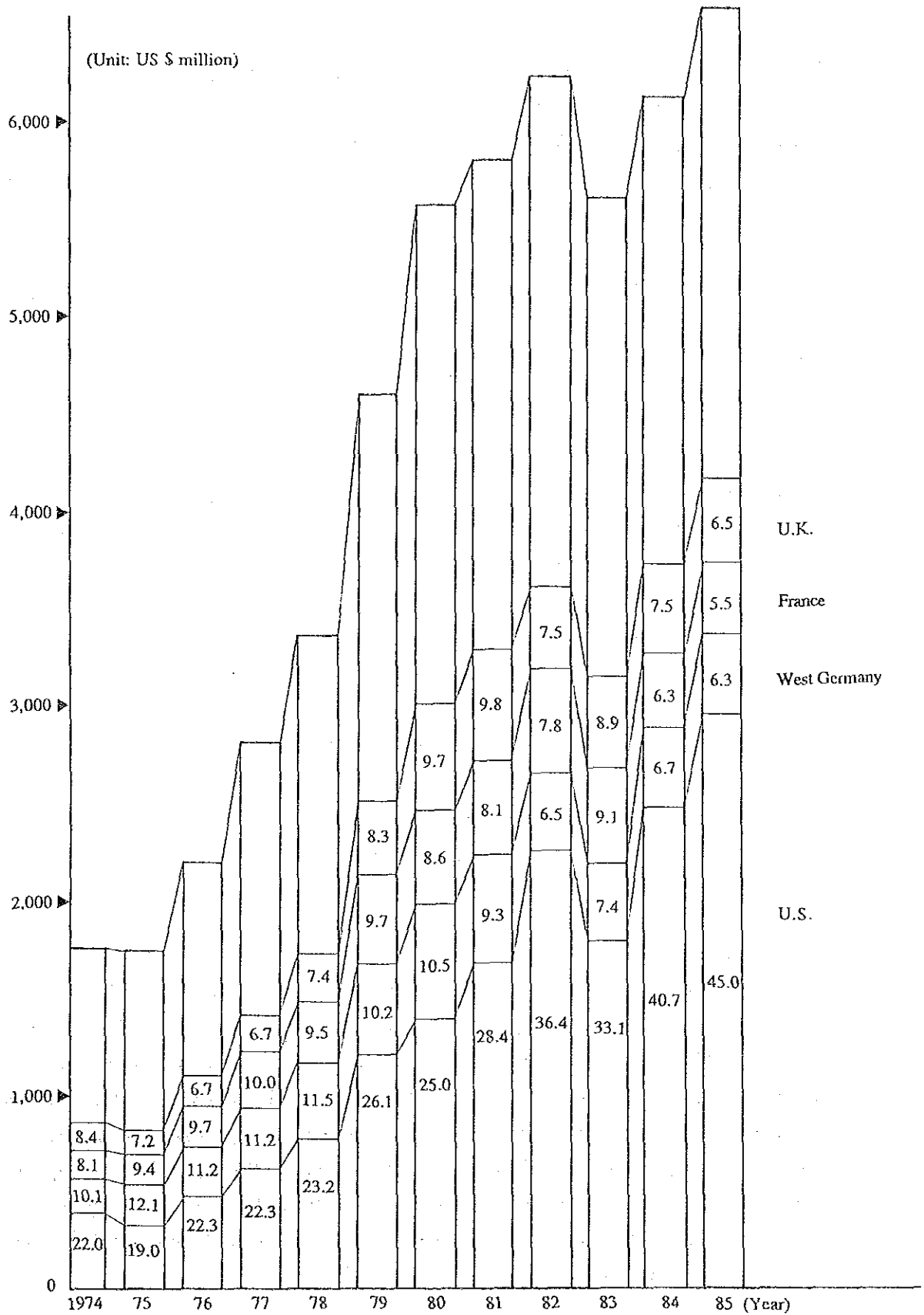
Looking at the international trend in the exports of toys over a period of a number of years from 1974, exports which were worth \$1.76 billion in 1974 increased 370% over the following 11-year period so that by 1985 they were worth \$6.59 billion. Exports broke through the \$2.0 billion mark in 1976, and in 1978 they were worth \$3.56 billion and in 1979 \$4.62 billion.

The major importers of toys are the United States, the European Community and Japan. As a long-term trend the shares of imports held by the U.S. and Japan have been expanding while the share of the EC has been contracting. In 1974 the EC accounted for 42% of imports and the U.S. 22%, but by 1985 this had changed so that the EC's share had declined to 27% and that of the U.S. risen to 45%. The share held by the U.S. reached the 30% mark in 1982 and then rose to the 40% mark by 1984. Although the EC held its 40% share from 1974 for a number of years, in 1981 it dropped down into the 30s, and by 1985 it had decreased even further to 27%. The value of imports into the U.S. exceeded that of the EC in 1982, and though it then slipped back temporarily below that of the EC the following year, it had recovered by 1984. Since then the gap between the value of imports to the U.S. and the EC has continued to widen.

However, since 1986 the U.S. has lost some of its vitality as the largest importer of toys in the world due to the decline in popularity of products which were once best-sellers and which had led the market up until then, and also the lack of any new products to replace them as market leaders. A look at import figures shows that the rate of increase of toy imports has been decreasing. In 1984 imports were worth \$2.15 billion, or a 36% increase over the 1983 level of \$1.58 billion, and in 1985 they had risen to \$2.74 billion, a 27% increase and then in 1986 they were worth \$3.05 billion, or a 11% increase over the previous year.

As for the regions from which toys were imported into the U.S. in 1986, the increase in toys from China was the largest recorded. During the period from 1983 to 1986 imports from China increased 24-fold. The market shares held by different countries and areas in 1986 were: Taiwan- 21.9%, Hong Kong- 21.2%, South Korea- 16.6%, China- 11.7%, and Japan- 10.6%. While the rate of increase of imports from South Korea and Taiwan were high, imports from Japan increased steadily up to 1985, but since then the appreciation of the yen has been felt so that the rate of increase for 1986 was less than that for the previous year. As China, South Korea and other countries catch up Hong Kong's competitiveness is being reduced. The EC is the second largest importer of toys in the world. In 1985 Great Britain's share of world imports of toys was 6.5%, West Germany 6.3%, and France 5.5%.

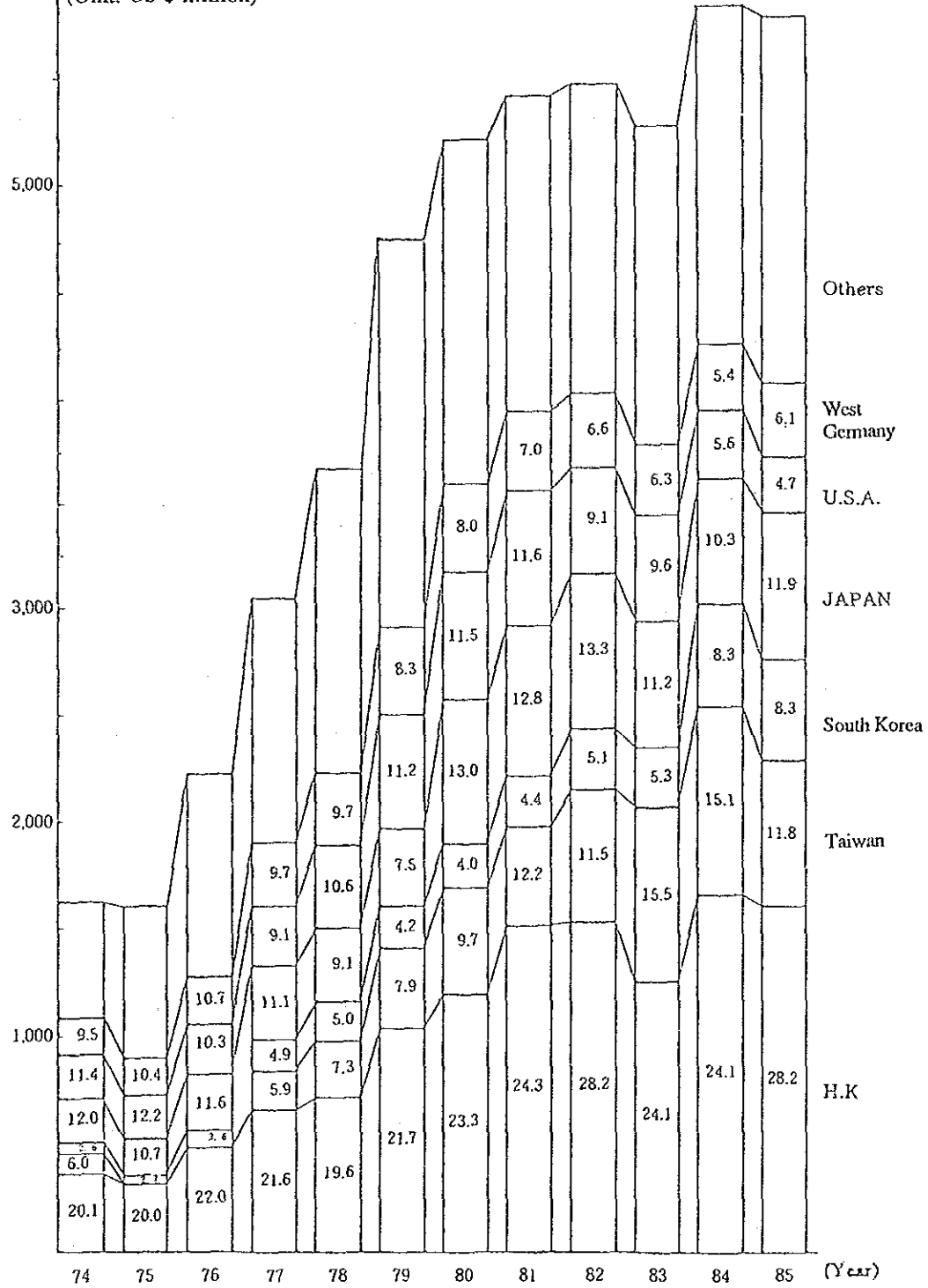
Chart III-1. Import Amount and Share of Toy Production in the World



Source: UN International Trade Statistics Yearbook 1985

Chart III-2. Export Amount and Share of Toy Production in the World

(Unit: US \$ million)



Source: UN International Trade Statistics Yearbook 1985

Taking the case of Great Britain as an example, in 1985 20% of its imports came from Hong Kong, 11.6% from Taiwan, 8% from Japan, 6.3% from France, and 6.2% from Italy. As for France's toy imports for 1986, 17.4% were from Italy, 13.9% from West Germany, 6.8% from Great Britain, and 6.4% from Macao. This shows that among European countries there are considerable differences in regard to the countries from which they import toys.

In the future the world toy market is likely to be influenced by the largest consumers, the U.S., Japan and the EC.

The U.S. Industrial Outlook 1988 estimates that from 1988 through to 1992 U.S. toy production will increase at an annual rate of 1.3%. It predicts that at the same time, American toy makers will expand their overseas production activities and that imports will increase. Industry estimates for the present time already have imports accounting for 80% of the American toy market.

4. Production Trends of Competing Countries

A long time has now passed since Asian nations and areas such as Hong Kong, Taiwan, South Korea and Japan became the leading exporters of toys. While in the past these Asian countries and European countries such as West Germany, Great Britain and Italy formed two large exporting groups, since 1981 the share of total exports held by the Asian group has exceeded 50%. Its share has risen steadily and in 1985 accounted for 63% of total exports. World toy exports, including Taiwan, were worth more than \$3.0 billion in 1977, \$4.8 billion in 1979, and since 1980 they have been worth more than \$5.0 billion. In 1985 they were worth \$5.8 billion.

During the 1960s exports from Hong Kong grew at an average annual rate of 25%, and in 1964 it overtook West Germany as the second largest exporter of toys in the world. Then in 1972 it overtook Japan to become the largest exporter of toys. Exports from Taiwan grew sharply during the 1970s and although in 1979 they temporarily surpassed exports from Japan to hold second place, they dropped back into third place in 1980. They then overtook Japan once more in 1983 and since then have held on to second place.

The common denominator between Hong Kong and Taiwan is that the U.S. accounts for an overwhelming share of their exports. In 1986 54% of toys exported from Hong Kong were bound for the U.S., and in the case of Taiwan they accounted for 57.5% of its exports in 1987. The high ratio of dependence on exports to the U.S., which consists largely of toys produced through OEM for large American toy manufacturers and

include original products, is due to the fact that the U.S. is the largest toy export market in the world.

Today, South Korea is the country which supplies the largest amount of stuffed toys in the world, but it did not achieve rapid growth in this area until the latter half of the 1970s. During the years from 1976 to 1986 toy production in South Korea increased at an average yearly rate of 21%, and in 1986 production was worth \$800 million. A large increase in exports has contributed to the increases which have been recorded since 1980. Stuffed toys account for 70% of toy production, plastic toys 9.5%, and metal toys 4.9%. Manufacturers of plastic and metal toys have adopted integrated production systems whereby they produce the majority of parts themselves. In 1987 exports broke through the \$1.0 billion mark, which represents a 5-fold increase from 1980 when exports were worth \$200 million. Stuffed toys account for nearly 70% of total toy exports. The U.S. is the largest importer of toys from South Korea, and in 1987 exports to the U.S. accounted for 67.6% of the country's total exports.

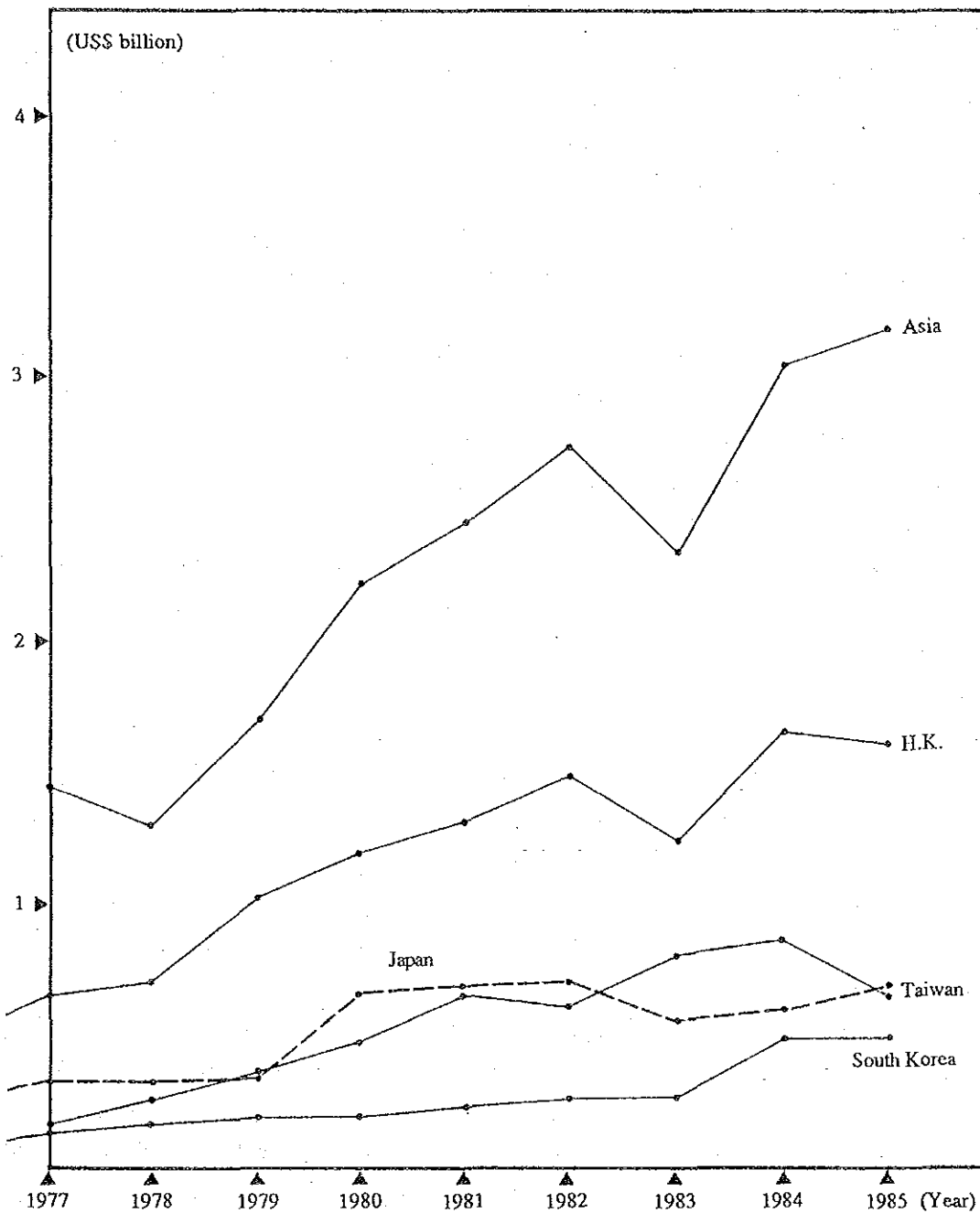
Toys from Japan started to be exported soon after the end of the Second World War as exchange goods to the U.S., and they fared very well as medium grade goods. For more than 20 years they dominated the international market and the toy industry developed as a stable export industry. However, toy exports from Japan reached their peak in 1982 when they were worth \$730 million. In 1983 they were worth \$590 million, or a 19% decrease over the previous year, and though they recovered somewhat in 1985 when they were worth \$680 million, the intensification of price competition accompanied by the appreciation of the yen saw exports decrease by 32% in 1986.

As for the types of toys exported by the major exporting countries and areas, Hong Kong, Taiwan and Japan export mainly plastic toys, and they represent 71%, 68% and 33% of total exports respectively.

As for production, as of September 1986 there were 2,264 companies in Hong Kong which manufactured toys and they employed a total of 56,164 workers. In Taiwan there were about 1,570 toy manufacturers and in Japan there were some 5,350 manufacturers which employed a total of 42,896 workers (Industrial Statistics, 1985). Because of the nature of the products which the toy industry makes most companies within the industry are labor-intensive. In Hong Kong 3.3% of all companies carry a work force of more than 100 employees, and in Japan it is as low as 1%.

In Hong Kong, the largest toy-producer in the world, there have been two main trends in toy production recently. Firstly, items produced are becoming high in standard and a change is taking place over to the production of upper grade toys, and secondly, a shift over to production in China is being seen as labor costs and the costs of raw materials in Hong Kong increase. Taiwan is faced with a sharp increase in labor costs and

Chart III-3. Groth Rate of Main Toy Exporting Nations & Areas of Asia



Source: UN International Trade Statistics Yearbook 1985

a labor shortage, and the rise of the New Taiwan Dollar on top of this has put it in a difficult position. Because up until now it has relied upon copied products, it is all the more important that the Taiwanese industry start to plan and develop original products which have added value.

Due to the slump in the domestic market, Japan is also facing difficult times, and manufacturers, wholesalers and sales stores alike are being forced to compete fiercely in order to stay in business. The market is being affected by the levelling off of the amount of consumption per individual child, the main users of toys, and the yearly decreases recorded in the birth rate. Toy manufacturers are all planning their own new products and are producing toys with a high amount of added value.

A vital factor in the development of the toy industry is the existence of its peripheral industries. Taking the case of Hong Kong as an example, its peripheral industries are the mold and die, electric plating, parts, and printing industries. There are a large number of manufacturers of molds for plastic whose technical capacities are high, and they support plastic toys which is one of Hong Kong's main products. In Japan the mold and die and parts (including ICs and motors) industries are well developed and there are some toy industrial estates.

The main toy exporting nations in Asia have not got to where they are today in the space of 20-30 years simply due to cheap labor costs and the specialization of OEM production with orders from large American manufacturers. The establishment of export inspection systems and stressing quality inspection have also played a major role in their growth. Since 1967 Hong Kong has been carrying out the inspection of painting on toys through the activities of SGS (the largest inspection organization in the world which is located in Switzerland). Taiwan is in the process of establishing the Taiwan Toy Safety and Inspection Center, South Korea has already established a miscellaneous products inspection center (KITI) and an inspection center for textile goods (KOTITI), and Japan has established centers such as the Japan Cultural Goods Safety Inspection Center.

5. Potential for Development as an Export Industry

The toy industry is a labor-intensive industry and is closely related to a wide variety of supporting industries such as the plastic mold and die industry, metal parts industry, mini spring, micro motor, gear, and nut parts industries and also the electronics parts industry. In addition, the toy industry is one in which medium and small-scale companies play an important part, and even in advanced countries such companies form the nucleus of the toy industry.

Viewed from this perspective, the toy industry is an industry which is suited to Thailand today. Recently Japanese toy manufacturers have set up operations in Thailand and there has been an increase in consignment production for Japanese and American manufacturers, and it is expected that the future will see a substantial increase in exports from Thailand to advanced countries.

The toy industry was designated an investment promotion industry by the BOI in 1977, and toys have been made export promotion commodities by the government. Toy exports from Thailand have increased sharply over the past 2-3 years, and in 1987 they were worth 1.6 billion bahts, which represented a 250% increase over the previous year. It is estimated that exports will exceed 3.0 billion bahts in 1988.

A number of foreign capital toy manufacturing companies, mainly from Japan, the U.S. and Hong Kong, have been setting up operations or consigning production to Thailand where labor costs are lower than in Asian NIEs. Policies relating to foreign capital, taxation and finance should accelerate this trend in the future, and if Thai toy manufacturers, including medium and small companies, and related industries grow by making improvements to quality and safety and by increasing their design and product development capacities, it is very possible that the toy industry will become one of Thailand's major exporting industries. What is more, this should also prove beneficial for the development of related industries.

6. Problems and Countermeasures

(1) Lack of organization within the industry

(Problems)

- [1] The Thai Toy Center was established in 1986 and so far 35 companies have become members. However, the center is not registered with the government and it is no more than a private club.
- [2] Although in Thailand the safety inspection of toys is carried out by a government inspection facility and the SGS in response to requests from customers, the equipment used for such inspections is inadequate. If Thailand is to maintain rapid growth in toy exports, copied products have to be done away with and safety must be guaranteed.

(Countermeasures)

- Although the Thai Toy Center is expected to be registered as a government association in 1988, the function of the center as an industry group needs to be strengthened and also close ties should be formed between it and the

export promotion activities of the Ministry of Commerce's Department of Export Promotion;

- An organization should be established to carry out the professional inspection of quality and safety standards, and Thai toy manufacturers taught more about improving quality and guaranteeing safety.

(2) Lack of information

(Problems)

- [1] The industry lacks information about the trends of the major overseas markets (U.S., Europe, Japan).
- [2] With the exception of a few large companies, manufacturers know barely anything about international safety standards for toys (such as those in the U.S., Europe and Japan).
- [3] There is insufficient knowledge about production technology. There is also a lack of information and experience relating to design and product development.

(Countermeasures)

- The provision of abundant information related to toys overseas;
- The collection and provision of information by the establishment of a toy industry promotion center;
- Increased and improved activities concerning toys by the Department of Export Promotion;
- Greater PR activities aimed at overseas industries regarding the Thai toy industry as a whole;
- The provision of sufficient information required in order to guarantee quality and safety and product development;
- Strengthen ties with overseas manufacturers with regard to information;
- Spread information regarding overseas markets over a wider area.

(3) Technical Problems

(Problems)

- [1] Because most products are either medium grade products which have few parts or low grade products which have a low added value, very few upper-grade products are produced. As competitors such as China appear in the future, products with a higher level of added value will be required.

- [2] The precision for parts is low and the finishing off processes such as the gate finishing process and removal of edges are rough. Precision in processing and assembly is similarly rough.
- [3] Although injection molding machines are used by even the smallest manufacturers in Thailand, they are mainly used-machines made in Hong Kong and Taiwan. Though manufacturers would like to introduce high performance injection molding machines from Japan, they are expensive.
- [4] Although general industrial sewing machines are used by stuffed toy manufacturers, they are usually old models. There are only a few manufacturers which have lock sawing machines which are capable of overcasting. Only manufacturers which employ more than 200 workers have stuffing machines.
- [5] The processing equipment of large companies includes belt conveyor lines, ultrasonic welding machines, painting equipment and ball lathes. Although medium and small companies possess the necessary equipment, such equipment is mostly of a low level. Although some companies have assembly lines they are not used as efficiently as they could and there is a noticeable lack of technical knowledge. In the case of small manufacturers, parts are treated badly after shaping, and there are no set standards for the subsequent processing and assembly stages.
- [6] Because the domestic mold and die industry is undeveloped, there are many companies which rely on importing expensive molds from overseas. Although large and medium-sized companies have the minimum of equipment required for the maintenance of molds, there is a lack of metal processing machines and equipment which are required for undertaking repairs and remodelling.
- [7] Imports are relied on for many types of parts such as small metal parts (springs and screws), and also gears, motors and rubber parts. When production expands in the future it will be necessary to have a large quantity of the same part supplied at the same time, and this could pose some problems in regard to delivery.
- [8] Technical capacity is low and many companies are unable to become involved in OEM production.

(Countermeasures)

- As the trend towards greater OEM production continues, a greater amount of technology should be accumulated and development capacity improved. In particular, more training and technical guidance is required for product

development and design, and preparations should be made for producing goods with a high added value in the future;

- Continuous training and technical guidance needs to be carried out for raising quality;
- Exemption from duties for imported machinery (injection molding machines, industrial sewing machines, cutting machines, etc);
- More technical guidance and efforts to spread technical knowledge over a wide area;
- The invitation of experts to carry out long-term technical guidance and training for private companies;
- Moves to promote the development of domestic mold and die manufacturers;
- Integration of industries, including supporting industries and increased links with peripheral industries;
- Promote establishment of joint ventures and setting up of production bases by foreign companies;
- Promotion of the formation of joint ventures with foreign companies and technical tie-ups with manufacturers which are interested in OEM production;

(4) Quality control and safety standards

(Problems)

- [1] Quality control systems are inadequate. While larger manufacturers carry out inspection both on production lines and then when products are finished, inspection carried out by the majority of medium and small companies is no more than a simple visual and manual inspection of functions.
- [2] Because the requirements and standards for sewing, binding, stuffing and sewing attachments which ensure basic quality in the case of stuffed toys are unclear, there is a lack of attention paid to detail. This is reflected in the roughness and looseness of stitches and there is an inconsistency in hardness (e.g. the face is hard but the body is soft).
- [3] With the exception of the large companies, most of the medium- and small-scale companies have little or no understanding of world safety standards for toys (e.g. the ST mark for Japan), and in many cases export inspection is carried out at the request of the customers.

(Countermeasures)

- More training and courses for production management, quality control and safety;
- The invitation of experts to carry out such training over a considerable period of time;
- The establishment of an authorized inspection organization and thorough inspection to be carried out in regard to safety;
- Greater technical guidance and training in order to guarantee safety.

(5) Product Planning and Development Divisions

(Problems)

- [1] Due to the heavy reliance on OEM production there is insufficient understanding as to the importance and meaning of the development of original products. Also, companies do not have the capacity to develop their own products, skills are inadequate and there is a shortage of development experts.
- [2] Stuffed toy manufacturers focus on coming up with single products in terms of product development and they do not undertake product planning using a range of products.

(Countermeasures)

- In preparation for independent product development in the future human resources must be developed (by holding training seminars related to products and design);
- Improved training and technical guidance in relation to product development and design;
- Invite experts to provide guidance over a long period of time.

(6) Marketing

(Problems)

- [1] There is a lack of information about overseas markets. This proves a handicap in following the trends of products which sell well around the world and in opening up new markets.
- [2] There are few companies which export or open up markets on their own. Market development is insufficient and is restricted to mainly overseas missions by the DEP, customer referrals, and participation in overseas toy trade fairs.

- [3] Due to the dependence on OEM production few companies are involved in sales-related activities. They do not have product catalogs or materials, and they usually do not know how their products are selling overseas or how they are used.
- [4] Manufacturers are unaware of the market for products for tourists (souvenirs and folk dolls).

(Countermeasures)

- The provision of abundant information related to toys overseas;
- Increased collection and provision of information through the establishment of a toy industry promotion center;
- More export promotion activities related to toys by the DEP;
- Greater PR activities aimed at overseas industries regarding by the Thai toy industry as a whole;
- The provision of sufficient information required in order to guarantee quality and safety and product development;
- Strengthened ties with overseas manufacturers with regard to information;
- Spreading information on overseas markets over a wider area;
- Technical guidance for improving folk dolls and also improvements on design and quality;
- Continuous guidance by experts;
- The formation of an organization and sales channels for developing the tourist market.

Chart III-4. Model of Toy Industry Development

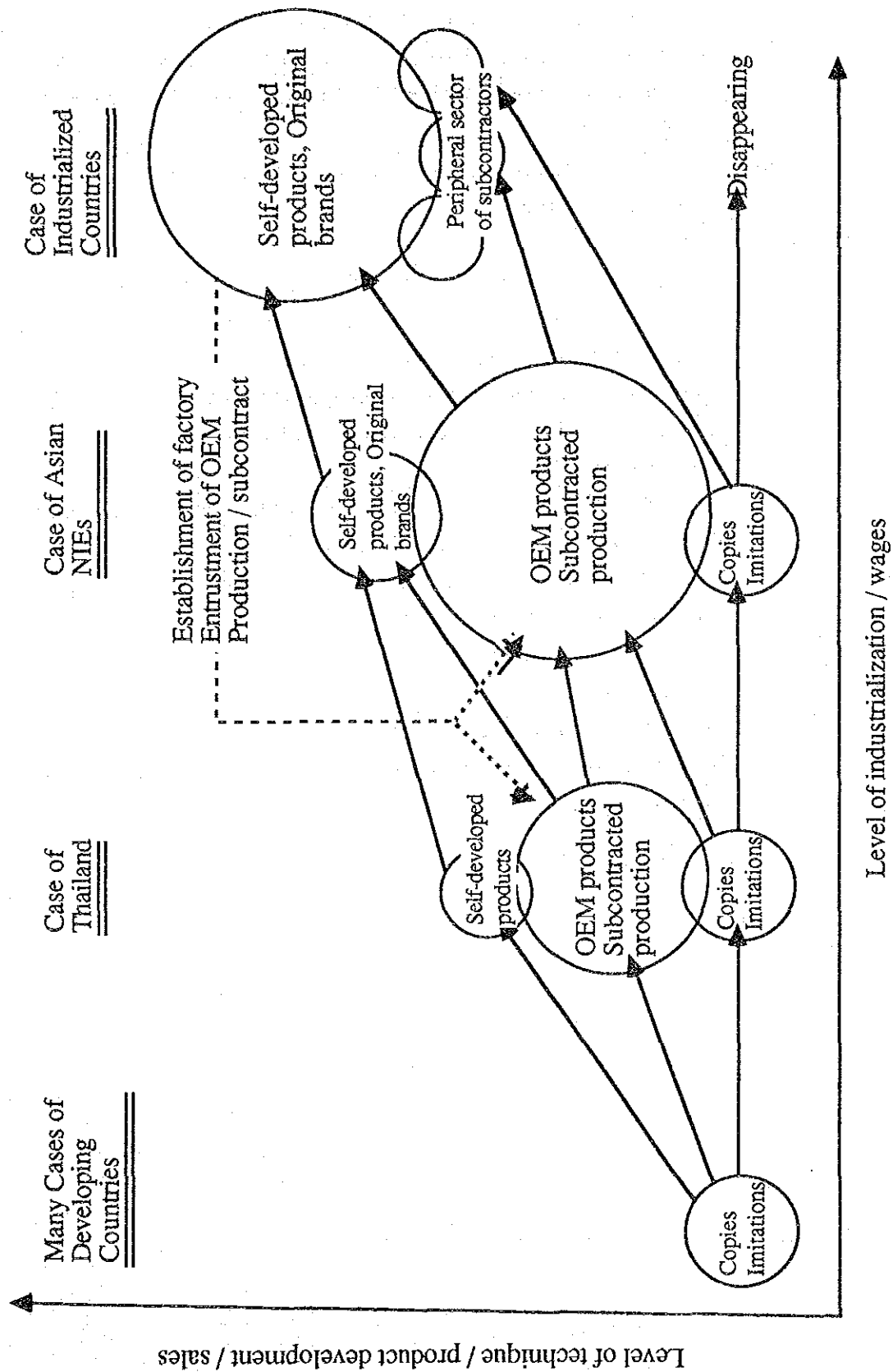
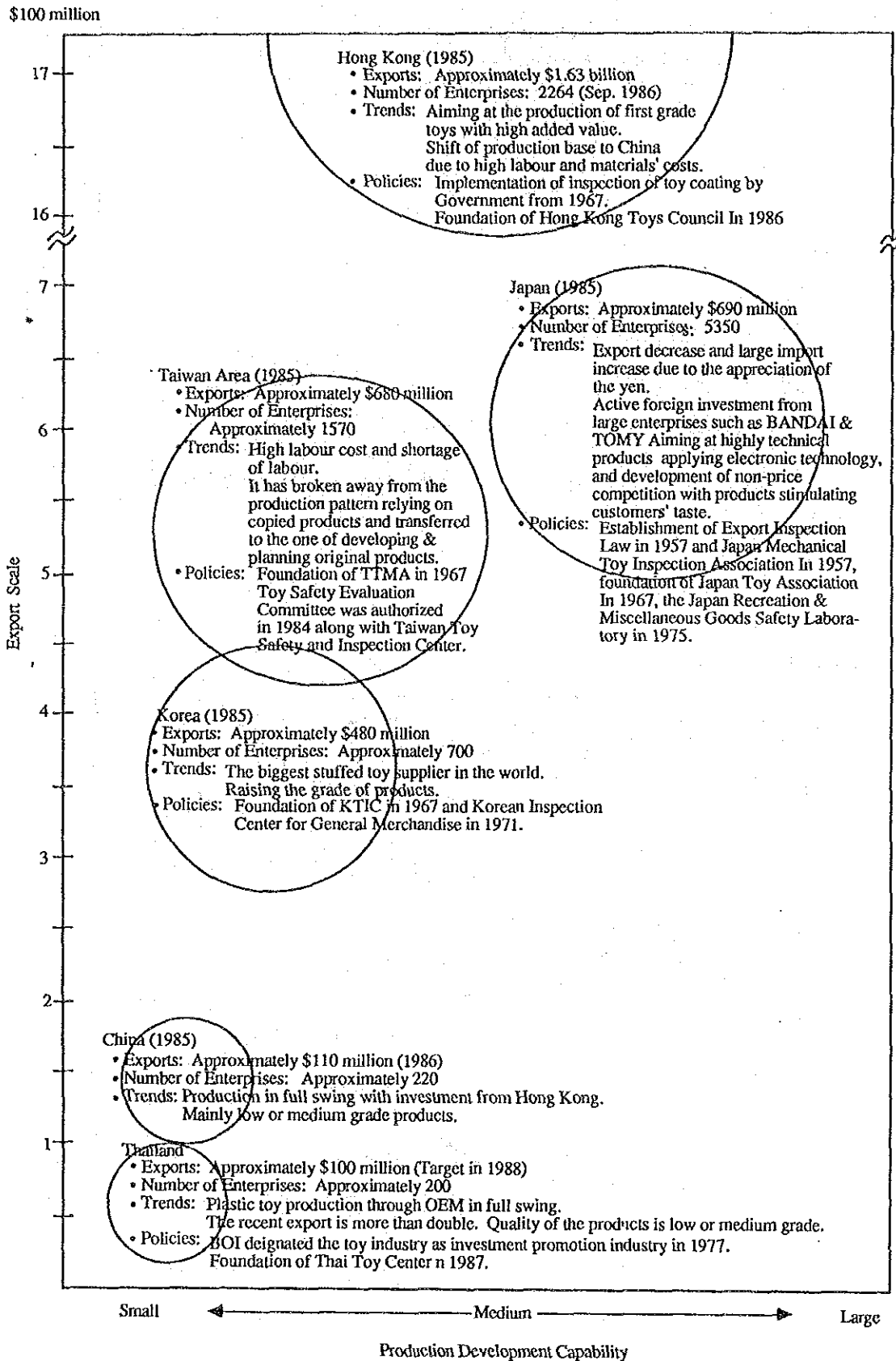
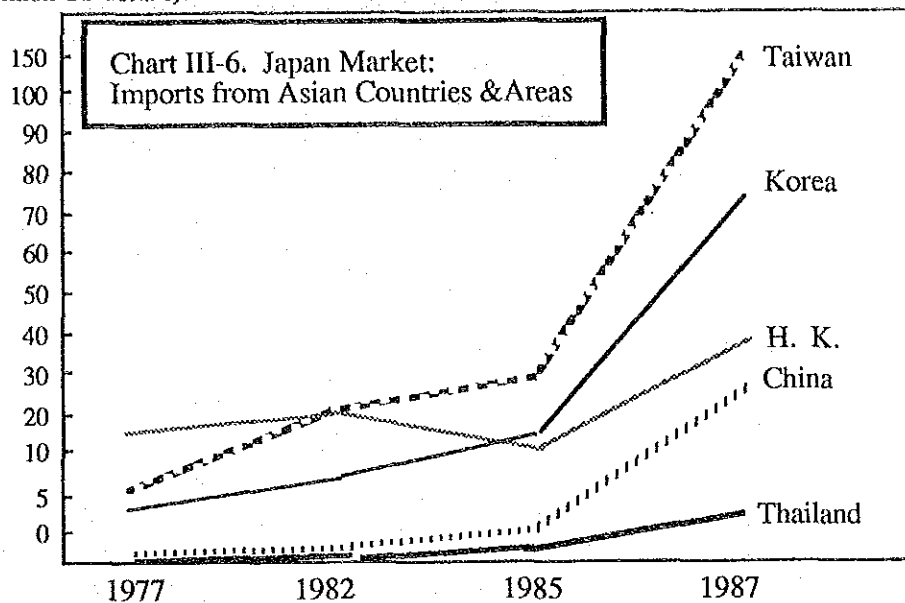


Chart III-5 Outline of Major Toy Manufacturing Countries & Areas

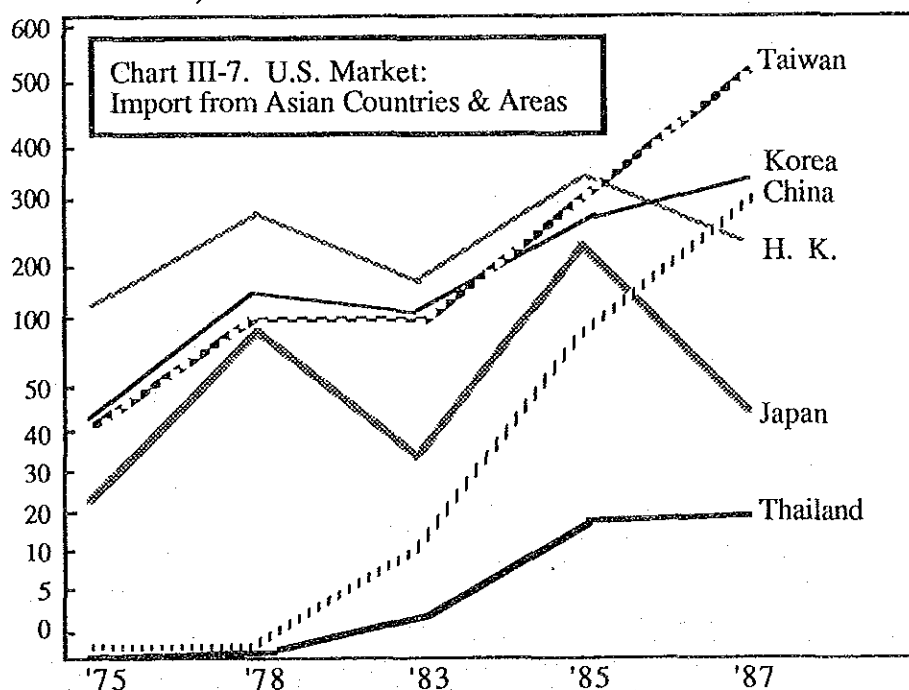


(Unit: Million US dollars)



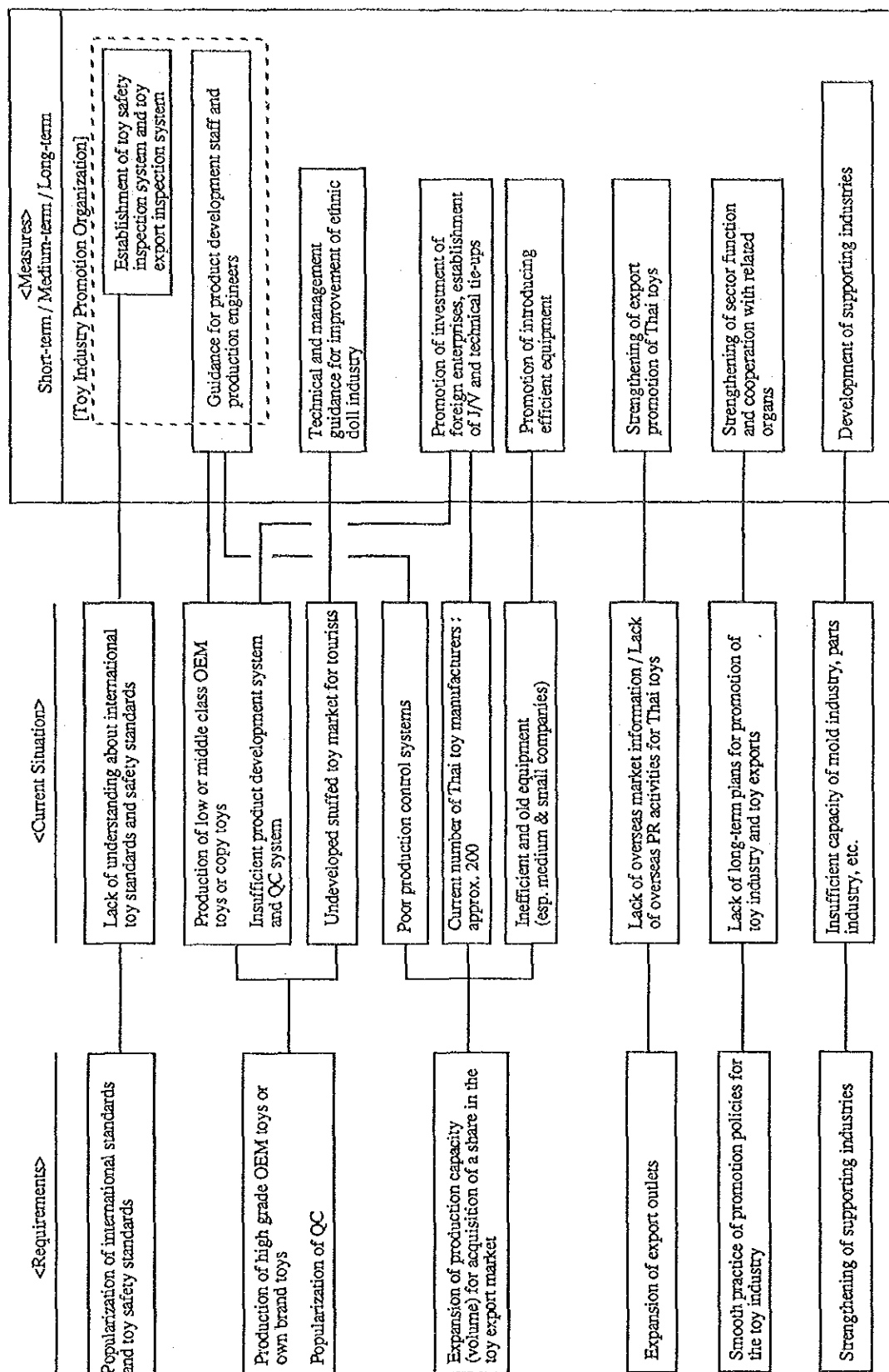
Source: '77: Trade Statistics; '82, '85, '87: JETRO NBDC System.

(Unit: Million US dollars)



Source: '75, '78: U.S. Trade Statistics; '83, '85, '87: JETRO USBDS System.

Chart III-8. Current Situation and Promotion Measures for Toy Industry



IV. COMPREHENSIVE PROGRAM

IV. Comprehensive Program

1. Imbalance in Industrial Structure and Small- and Medium-Sized Enterprises

1-1. Growing Imbalance in Industrial Structure

Thailand's manufacturing industries are continuing to grow steadily. In particular, the brisk investment activities of domestic and foreign companies making use of the investment incentives of the BOI have helped promote rapid development of the export-oriented manufacturing industries. Exports of a broad range of industrial manufactures, from processed foods, textiles, and light industrial goods to automobiles and parts, electrical and electronic equipment and parts, etc., have been growing rapidly. In view of the sustained activity in investment, this trend may be expected to continue in the future.

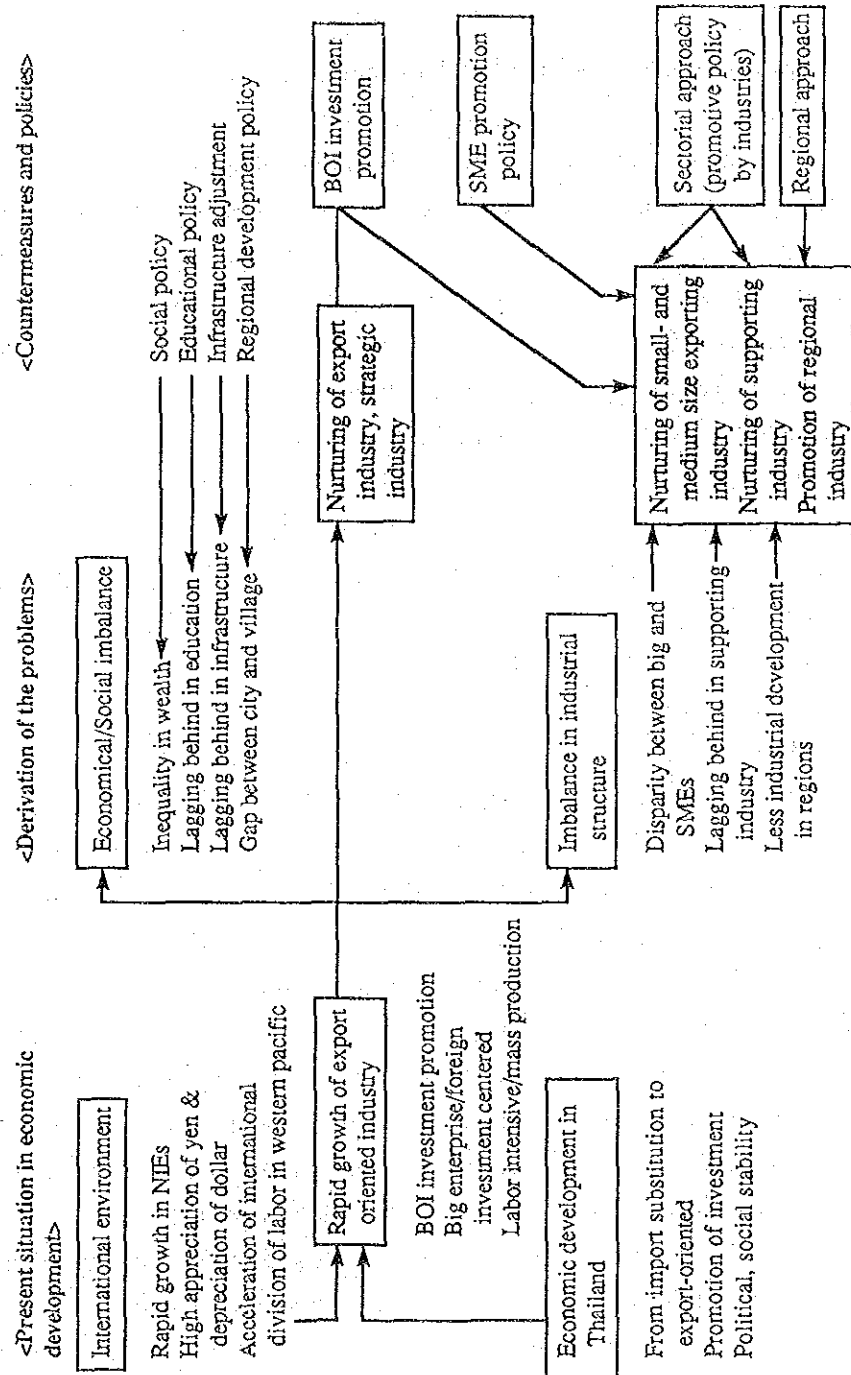
However, several issues and problems are arising in the process of this steady industrial development as seen from the viewpoint of promotion of export industries. For example, there is congestion in the ports, insufficient industrial sites, lack of means of communication, and other problems in infrastructure. The government and related organizations are working to resolve these problems, however, and the situation is expected to improve.

Along with this, there is the very grave problem of a growing imbalance in the industrial structure. While export-oriented manufacturing industries have been developing rapidly, there are many small- and medium-sized enterprises (SMEs) and petty industries which are being left behind, resulting in a growing gap in technology and management expertise between the large corporations and foreign affiliates and the SMEs and petty industries. There are many SMEs which cannot keep up with the growth of the export industries in the supporting industries and subcontracting industries as well, which support the export-oriented industries. This is causing a structural imbalance in the manufacturing industries. It is not only a restrictive factor in the activities of the large corporations and foreign affiliated firms, but is also inviting a surge in imports of parts and materials and therefore leading to a growing trade imbalance.

This delayed development of the SMEs and the supporting industries (including subcontracting industries) is due to various factors, for example:

- The investment incentives of the BOI, which are a major driving force behind the industrial development of Thailand, are difficult to use by such industries. (Since BOI approve its investment incentives to the companies by separate examination, there is a tendency for giving priority in processing to more effective, larger projects.)

Chart IV-1. Economical/Social/Industrial Development and Policies in Thailand



- The taxation system in Thailand is disadvantageous to the SMEs as compared with the large corporations and inconvenient to the supporting industries too.
- The financial system of Thailand is disadvantageous to the SMEs as compared with the large corporations in many cases.
- In general, the SMEs are slow in modernizing their management and technologies and lack the necessary information and knowhow.

1-2. Case of Mold and Die Industry

The mold and die industry, one of the industries surveyed, represents an important part of the supporting industries. In present day Thailand, demand for molds and dies is growing rapidly in the export industries, but the domestic supply capacity is far from sufficient. Therefore, large corporations and foreign affiliated firms either establish in-house divisions for producing molds and dies and supply themselves or else rely on imports for the majority of their required molds and dies. Most small- and medium-independent mold and die manufacturers cannot cope with this new demand and are being left behind with their low level of technology and old-fashioned management standings.

The light industries (in particular plastic working, toys, etc.), automobile and auto parts industries, and electrical and electronic equipment industries, growing Thai export industries, require the supply of high quality molds and dies. Even if in-house production and imports of high quality molds and dies continues to be necessary in the future, there is no question that most users would hope to see an improvement in the technical level and supply capacity of independent, domestic mold and die manufacturers.

For molds and dies, in view of the nature of the product, it would be preferable structurally to have a large number of independent, SMEs in addition to the in-house production divisions of major users. This is the general situation in the industrialized nations. However, in Thailand, the SMEs have fallen behind and are unable to cope with user needs, so the situation is far from ideal structure. This shows there is a structural imbalance in the mold and die industry.

A similar problem has been pointed out in South Korea. South Korea has devised a series of measures since 1986 to rapidly promote the growth of a number of "subcontracting industries", including mold and die manufacturers.

1-3. Case of Toy Industry

In the other industry surveyed, toys, a few large manufacturers and foreign affiliated firms have established international levels of production technology and management with mass production of relatively simple types of products and are expanding their exports to foreign markets. These companies are mostly, however, engaged in OEM production under order from foreign companies or also subcontracting production. Many companies do not yet have the ability to design and develop their own products. At the present stage, Thailand is using OEM production to lay the foundation for the industry and accumulate technical knowhow, but in the future it will have to foster its own design and product development capabilities.

On the other hand, there are many SMEs producing copies of foreign products or inferior merchandise. Most of these enterprises are old-fashioned in management and are being left behind the process of development of the export industry.

As seen from the examples of Hong Kong and Japan, the toy industry is inherently founded on small firms and petty industries. While large corporations may form for mass produced products, it is the cumulative effect of the various types of toy makers, from large enterprises to small and petty sized industries, and the supporting industries which is great.

If Thailand wishes to strengthen its role as a production and export base for toys, then the current situation, where the large manufacturers and foreign affiliates are boosting exports based on OEM production and subcontracted production and where the SMEs are being left behind, is undesirable. Here too, this can be pointed to as a structural imbalance.

In the future, Thailand should aim at an industrial structure where the many SMEs modernize their technology and management or tie up with large corporations or foreign affiliates and enter into OEM production or subcontracted production so that the various toy makers, from the large firms to small ones, compete in activity.

1-4. Division of Labor Between Large Enterprises and SMEs

A look at the process of development of the industrial structures of the industrialized nations and the NIEs shows that industrial development was accompanied by a pursuit of the "profits of scale". Many "large corporations" grew through expansion of production facilities, expansion of sales networks, and the corresponding growth of the corporate organizations. These came to play central roles in the industrial development. On the other hand, since the large corporations concentrated their activities

in fields suited for mass production and mass sales, there were "gaps" all over the activities of the large firms.

In parallel with the development of the large enterprises, numerous SMEs were developed and filled these gaps, thereby forming a social division of labor between the large firms and small ones.

On the other hand, the large corporations themselves tended increasingly to lose flexibility as enterprises due to the immobilization of assets and swelling management expenses. To deal with this, most of them concentrated the own production activities as much as possible in efficient, basic fields and contracted out the supplementary work to SMEs and subcontractors. This also promoted the social division of labor between the large firms and small enterprises.

The coexistence of the large and small firms leave open the chance for SMEs with strong growth potentials to expand their businesses into the field of activities of the large firms or expand in size through development of new products and new techniques and thus grow to large firms. This prevented the large corporations from maintaining a monopolistic position and gave rise to competition among the large firms or among the large firms and the SMEs and thus had the effect of maintaining the dynamism of industrial development.

Further, in recent years, demand and preferences have been diversifying on the world market and becoming more personalized, with an increase in the fields easier for SMEs rather than large corporations to cope with.

Further, there are many areas in the many new, growing service fields which are suited to the activities of SMEs. This promises further development of the social division of labor between large corporations and SMEs.

Today, the large corporations and SMEs coexist with a certain balance in the industrial structures of all the advanced industrialized nations of the world. This is recognized as desirable both for dealing with social demand and for maintaining the vitality of industrial activity.

The factors enable survival of the SMEs have been said to be the following:

[1] They handle the production, sales, and services in "gap" areas not dealt with by the large corporations.

[2] They handle parts production, subcontracting of work, repair of machinery and equipment, and other so-called supporting industries, lines of business supplementing the large corporations.

[3] They operate in specialized fields such as traditional technology, new technology, and new services.