Table 2.6 UNIT SIZE OF FACTORY

	(1) Number of Factory	(2) No. of Employee (person)	(3) Land Area (rai)	(4) Sales Amount (100 baht)	(5) Water Consumption (m^3/month)	Unit per factory: Employee	Land Area	Sales Amount	Water Cons.
Food & Beverage	43	1,311 (43)*2/	2,201 (38)	373,488 (34)	195,822 (27)	30	58	10,985	7,253
Wood & Lumber	8	320 (8)	101 (7)	61,067 (5)	587 (5)	40	14	12,213	117
Furniture	17	281 (17)	54 (16)	17,640 (11)	29 (2)	17	3	1,604	15
Printing	7	37 (7)	8 (7)	2,467 (6)	-	5	1	411	-
Chemicals	2	25 (2)	9 (2)	3,902 (2)	200 (1)	13	5	1,951	200
Rubber Products	11	775 (11)	124 (11)	711,759 (9)	41,086 (8)	70	11	79,084	5,136
Ceramics	19	884 (19)	371 (19)	50,332 (19)	7,635 (7)	47	20	2,649	1,091
Non-Ferrous Metal	1	318 (1)	28 (1)	7,967,000 (1)	1,500 (1)	318	28	7,967,000	1,500
Metal Fabrication	13	143 (13)	26 (12)	7,464 (12)	5 (1)	11	2	622	5
Machinery	5	233 (5)	83 (5)	11,867 (4)	2,250 (1)	47	17	2,967	2,250
Electric Machinery	1	4 (1)	3 (1)	462 (1)	-	4	3	462	-
Transportation Equipment	9	168 (9)	708 (9)	8,084 (7)	810 (3)	19	78	1,155	270
TOTAL *1/	135	4,181 (134)	3,683 (127)	1,248,532 (110)	248,424 (55)	31	29	11,350	4,517

*1/ excluding Non-Ferrous Metal.

*2/ figures in parentheses means number of factories answered for each item.

Table 2.7 MARKET SHARE OF PRODUCTS

	Number of Factories (Effective)	South	Bangkok	Other Domestic	Export
Food & Beverage	40	72	24	3	-
Wood & Lumber	7	71	17	12	-
Furniture	16	99	1	-	-
Printing	7	100	-	-	-
Chemicals	1	-	-	-	100
Rubber Products	11	18	16	1	64
Ceramics	19	100	-	-	-
Non-Ferrous Metal	1	-	2	-	98
Metal Fabrication	11	100	-	-	-
Machinery	5	90	10	-	-
Electric Machinery	1	100	-	-	-
Transportation Equipment	9	75	2	13	1
TOTAL (AVERAGE) 1/	128	79	11	3	7

1/ Average with weight by number of factories for each industry.

Table 2.8 EVALUATION OF MARKET POTENTIAL

	Domestic Market			Export		
	Excellent	Good	Worse	Excellent	Good	Worse
Food & Beverage	3	29	10	1	6	3
Wood & Lumber		4	3		1	1
Furniture		8	5		1	
Printing		5	1			
Chemicals		1	1		1	
Rubber Products		7	4		7	1
Ceramics	1	12	6	1		
Non-Ferrous Metal		1				1
Metal Fabrication		6	7		1	
Machinery	1	2	1			2
Electric Machinery		1				
Transportation Equipment		5	3		1	
TOTAL	5	81	41	2	18	8

Table 2.9 FINANCIAL CONDITION

	Availability of Fund			Interest Rate		
	Excellent	Good	Worse	Excellent	Good	Worse
Food & Beverage	1	32	8		16	8
Wood & Lumber	1	3	2	1	2	1
Furniture		3	11		4	6
Printing		5	1	1	2	3
Chemicals		2			1	
Rubber Products		3	7		6	4
Ceramics		10	7		9	3
Non-Ferrous Metal		1			1	
Metal Fabrication		6	7		1	5
Machinery		1	3		1	3
Electric Machinery		1				
Transportation Equipment	1	5	1		3	1
TOTAL	3 (2.5%)	72 (59.0%)	47 (38.5%)	2 (2.4%)	46 (56.1%)	34 (41.5%)

7) Important Factors to Choose the Plant Location

In the questionnaire, six factors are presented for evaluation by entrepreneurs who chose plant location at present site. These are follows :

(1) Availability of raw materials

(2) Availability of labour

(3) Availability of space

(4) Access to market

(5) Availability of utilities (water, electricity, communication etc.)

(6) Access road

(7) Other factors

Entrepreneurs in general, have chosen the site by taking into account both of "market" and "raw materials". As mentioned already, a part of the manufacturing industries in the Study Area are based on local materials. The result of questionnaire reflect exactly these characteristics of the industry in the Study Area (See Table 2.10).

8) Problems at Present Location

It is asked whether entrepreneurs are facing any problem at present location or not. Problems are presented as follows:

(1) Shortage of space

(2) Complaints from neighborers about noise, pollution etc.

(3) Difficulty to obtain labour

(4) Inadequate supply of water, electricity etc.

(5) Long distance from major market

(6) Others

Besides "others", two major problems arise among entrepreneurs in the Study Area. One is inconvenience or shortage of utility, and the other is the shortage of land area (space). The former requests to improve utility services and the later implies the possibility of expansion or relocation of factories. The requirement to establish industrial estates with sufficient supply of utility seems to be proposed by local entrepreneurs (See Table 2.11).

Table 2.10 EVALUATION OF LOCATION FACTORS

	(1) Raw Material	(2) Labour	(3) Space	(4) Market	(5) Utility	(6) Road	(7) Others
Food & Beverage	20	9	15	21	16	10	10
Wood & Lumber	3	1	3	4	2	4	1
Furniture	3	6	6	6	5	3	4
Printing				4	3	5	1
Chemicals		1	1	1	1	1	
Rubber Products	9	3	4		4	3	2
Ceramics	11	3	7	10	3	10	2
Non-Ferrous Metal	1						
Metal Fabrication	2	1	7	2	7	5	4
Machinery	1	1	2	3	3	2	
Electric Machinery				1			
Transportation Equipment	3	2	1	5	3	5	3
TOTAL	53 (17.4%)	27 (8.9%)	46 (15.1%)	57 (18.7%)	47 (15.4%)	48 (15.7%)	27 (8.9%)

Table 2.11 PROBLEMS AT PRESENT LOCATION

	(1) Space	(2) Complaints	(3) Labour	(4) Utility	(5) Market	(6) Others
Food & Beverage	4	5	1	5	3	15
Wood & Lumber				1		4
Furniture	3		1	3	1	6
Printing			1		1	4
Chemicals	1			1		
Rubber Products				3	1	3
Ceramics	2	1	1	2	2	4
Non-Ferrous Metal				1		1
Metal Fabrication	1		2	1		6
Machinery			1			2
Electric Machinery						
Transportation Equipment	2					2
TOTAL	13	6	7	17	8	47

9) Possibility of New Investment

A question is asked whether entrepreneurs have a plan to invest or not by themselves within ten years. More than half of answers have some intent to invest as shown on Table 2.12.

A little bit less than 56 per cent of 68 entrepreneurs have intention to expand their factories. If they have not enough land area at present location, new location of factories could be expected. It seems that there are many factories suffering from shortage of land area as mentioned in the previous section. Next to the expansion, moving to other industries is intended (30.9 per cent of intention). Local entrepreneurs are seeking better opportunities to invest than their operation at present.

Table 2.12 POSSIBILITY OF NEW INVESTMENT

	"No"	"Yes"	Expansion	Branch	Relocation	Other Ind.
Food & Beverage	25	15	9	2		4
Wood & Lumber	4	6	4			2
Furniture	7	8	6			2
Printing	2	5	1	1		3
Chemicals		2		1		1
Rubber Products	4	5	2	1	1	1
Ceramics	4	14	9		1	4
Non-Ferrous Metal	1					
Metal Fabrication	8	5	2		1	2
Machinery	2	3	2			1
Electric Machinery	1					
Transportation Equipment	4	5	3	1		1
TOTAL	62	68	38	6	3	21

Table 2.13 PROJECTS GRANTED PROMOTION CERTIFICATES BY BOARD OF INVESTMENTS

(1) PROJECTS IN OPERATION

	Name of Company	Location of Project	Project & Capacity	Date of Start	Registered Capital(1,000 baht)	Number of Employees(persons)
1.	Thai Palm Development Co., Ltd.	Phuket	Oil Palm Plantation (10,000 rai)	Aug. 1, 1981	40,000	946
2.	The Siam Palm Oil and Refinery Industry Co., Ltd.	Ao Luk, Krabi	Oil Palm Plantation (15,000 rai)	May 1, 1982	30,000	178
3.	Thai Oil Palm Industry and Estate Co., Ltd.	Ao Luk, Krabi	Oil Palm Plantation (20,000 rai)	May 9, 1974	30,000	455
4.	Thai Coconut Industry Co., Ltd.	Surat Thani	Coconut Fibre (1,476 tons)	Nov. 1, 1961	12,000	80
5.	Pan Asia Food Industry Co., Ltd.	Ban Don, Surat Thani	Canned Seafood (1,930 tons)	Jan. 24, 1977	5,000	405
6.	Asean Foods Industry Co., Ltd.	Phun Phin, Surat Thani	Canned Seafood (1,537 tons) Frozen Seafood (800 tons)	May 10, 1980	10,000	421
7.	Thai Oil Palm Industry and Estate Co., Ltd. (No. 3)	Plai Playa, Krabi	Crude Palm Oil (6,877 tons) Kernel (837.7 tons)	May 9, 1974	30,000	455
8.	Thai Palm Development Co., Ltd. (No. 1)	Phuket	Palm Oil (21,600 tons) Kernel (5,760 tons)	Aug. 1, 1981	40,000	946
9.	Thai Thavee Rubber Co., Ltd.	Thalang, Phuket	Rubber Products (TTR5L, TTR5, 1,995.5 tons)	Aug. 25,1979	10,000	80
10.	Thailand Pearl Industry Co., Ltd.	Phuket	Pearl Cultured (52,800 units)	Mar. 10, 1967	2,000	90
11.	Thailand Marine Products Co., Ltd.	Phuket	Pearl Cultured (2,500 units)	Jan. 5, 1967	2,500	23
12.	P & S Industry Co., Ltd.	Surat Thani	Barite (48,000 tons)	Aug. 25, 1970	2,000	147
13.	Chinteik Brothers Co., Ltd.	Thai Muang, Phangnga	Tin Concentrates (240 tons)	Oct. 14, 1979	4,900	68
14.	Krabi International Fluorite Co., Ltd.	Khlong Thom, Krabi	Fluorite (30,000 tons)	Nov. 16, 1979	15,000	58
15.	Asia Stannum Co., Ltd.	Thalong, Phuket	Mining & Dressing of Tin Ores (405 tons)	Jan. 22, 1983	35,000	115
16.	Siam American Mining Enterprise Co., Ltd.	Surat Thani	Antimony	June 4, 1963	500	160
17.	Siam American Mining Enterprise Co., Ltd.(No. 16)	Surat Thani	Antimony Metal (500 tons)	June 4, 1963	500	160
18.	Thailand Smelting and Refining Co., Ltd.	Phuket	Tin Metal (34,367 tons)	July 24, 1965	200,000	318
19.	Thai Iron Co., Ltd.	Phuket	Machinery for Mining & Industry	Mar. 9, 1981	16,000	101
20.	Thai Iron Co., Ltd. (No. 19)	Phuket	Spare parts of Machinery	Mar. 9, 1981	16,000	101
21.	Pramong Vichit Co., Ltd.	Phuket	Scale Ice (3,973 tons)	Nov. 1, 1969	16,200	19

Name of Company	Location of Project	Project & Capacity	Date of Start	Registered Capital (1,000 baht)	Number of Employees (persons)
22. Tavorn Wong-Wongse Co., Ltd.	Phuket	Hotel (50 rooms)	May 4, 1963	1,000	119
23. Phuket Island Co., Ltd.	Phuket	Hotel (124 rooms)	Jan. 1, 1978	10,000	301
24. Pearl Co., Ltd.	Phuket	Hotel (212 rooms)	Jan. 29, 1976	25,000	323
25. Patong Garden Hotel Co., Ltd.	Phuket	Hotel (104 rooms)	Oct. 1, 1976	15,000	121
26. Imperial Hotel Co., Ltd.	Phuket	Hotel (50 rooms)	Nov. 23, 1962	7,200	113
27. Sretteawat Co., Ltd.	Surat Thani	Hotel (120 rooms)	June 11, 1970	7,500	68
28. Tip Thani Co., Ltd.	Surat Thani	Hotel (172 rooms)	Mar. 17, 1982	24,000	150
29. Trang Ice & Cold Storage Co., Ltd.	Kantang, Trang	Cold Storage (1,500 tons)	July 1, 1970	10,000	28
30. Thai Udom Cold Storage Co., Ltd.	Kantang, Trang	Cold Storage (300 tons)	Mar. 28, 1975	2,000	116
31. Surat Thani Cold Storage Co., Ltd.	Surat Thani	Cold Storage (9,600 tons)	Mar. 9, 1980	6,000	45
32. The Siam Palm Oil and Refinery Industry Co., Ltd. (No. 2)	Ao Luk, Krabi	Crude Palm Oil (18,000 tons) Kernel (3,000 tons)	May 1, 1982	65,000	178
33. Kantang Cold Storage Industry Co., Ltd.	Kantang, Trang	Cold Storage (3,150 tons)	May 1, 1983	5,000	200

(2) PROJECTS NOT YET IN OPERATION

as of 1982

	Name of Company	Location	Project & Capacity	Registered Capital	Number of Employees
1.	Pithan Palm Patana Co., Ltd.	Ao Luk, Krabi	Oil Palm Plantation (5,000 rai)	25,000	(335)
2.	United Palm Oil Industry Co., Ltd.	Ao Luk, Krabi	Oil Palm Plantation (20,000 rai)	40,000	(2,222)
3.	V.S. Palm Estate Co., Ltd.	Muang, Krabi	Oil Palm Plantation (2,000 rai)	10,000	(162)
4.	Thai Agro-Industry Management Co., Ltd.	Thai Muang, Phangnga	Cashew Plantation (2,000 rai)	10,000	(127)
5.	The Southern Palm (1978) Co., Ltd.	Khiri Rathanikhom, Surat Thani	Oil Palm Plantation (12,000 rai)	10,000	(178)
6.	Surat Thani Forest Co., Ltd.	Surat Thani	Nursery Block from Coconut Tree (30 million unit) Composted Organic Soil (10,000 sacks)	10,000	(76)
7.	United Palm Oil Industry Co., Ltd. (No. 2)	Phra Saong, Surat Thani	Crude Palm Oil (10,000 tons) Palm Kernel (1,750 tons)	40,000	(2,222)
8.	The Southern Palm (1978) Co., Ltd. (No. 5)	Khiri Rathani-khom, Surat Thani	Crude Palm Oil (4,800 tons) Palm Kernel (1,080 tons)	10,000	(718)
9.	S.A. Sands (Phuket) Co., Ltd.	Phuket	Zircon (5,000 tons) Rutile (2,000 tons) Monazite (300 tons) Ilmanite (2,000 tons) Tin (12 tons)	3,000	(80)
10.	S.K. Mineral Co., Ltd.	Klong Thom, Krabi	Mining & Dressing of Fluorite (60,000 tons)	5,000	(54)
11.	Thai Watana Mining Co., Ltd.	Thai Muang, Phangnga	Mining & Dressing of Tin Ores (2,000 tons)	30,000	(185)
12.	Thailand Tantalum Industry Co., Ltd.	Phuket	Ferro Tantalum, Niobium Alloy(3,000 ton) Expansion: Tantalum Pentoxide (300 ton) Niobium Pentoxide (300 ton)	100,000	(197)
13.	Phuket Merlin Co., Ltd.	Phuket	Hotel (180 rooms)	25,000	(82)
14.	Wang Thai Co., Ltd.	Surat Thani	Hotel (200 rooms)	40,000	(200)
15.	Viriya Hotel Phuket Co., Ltd.	Phuket	Hotel (112 rooms)	20,000	(90)
16.	Nimit Village Co., Ltd.	Phuket	Hotel (140 rooms)	10,000	(105)
17.	Naowarat Krabi Co., Ltd.	Krabi	Hotel (116 rooms)	11,000	(45)
18.	Sea Horse(Surat Thani) Trading Co., Ltd.	Surat Thani	Cold Storage (2,500 tons)	16,000	(192)
19.	Shum Sin Agriculture Co., Ltd.	Kho Yao, Phangnga	Cashew Plantation (1,500 rai)	10,000	(210)
20.	Sea Minerals Ltd.	Takua Pa, Phangnga	Deep Water Exploration Project for Tin Ore (1,500 holes)	32,352	(46)
21.	Surat Seafood Co., Ltd.	Phun Phin, Surat Thani	Cold Storage (6,600 tons)	2,500	(463)

3. SELECTED INDUSTRIES FOR LONG-TERM INDUCEMENT

3.1 ELECTRIC FURNACE

Apparent annual consumption of steel is 1.8 to 2.0 million or 40 kilograms per capita in Thailand at present. Steel consumption is a good indicator to measure level of economic development, or level of development of engineering industries in particular (see Table 3.1).

Table 3.1 CROSS-NATIONAL COMPARISON OF STEEL CONSUMPTION, 1980

Country	Steel Consumption Per Capita (kg)	GDP Per Capita (US $)
Indonesia	20	430
The Philippines	30	690
Thailand	40	700
Malaysia	120	1,620
Japan	635	9,890

Note : High correlation between steel consumption per capita in GDP per capita can be observed in the following formula estimated based on the data in this Table:

$$\ln Y = -3.613 + 1.104 \ln X \quad (R^2 = 0.9851)$$

where Y : Per capita steel consumption

X : Per capita GDP

Industrial and economic expansion of Thailand will naturally involve increasing consumption of steel. Using the formula presented under Table 3.1. It can be estimated that steel consumption will be 7.55 million tons or 118 kilograms per capita if per capita GDP reaches 2000 US dollars and population is 64 million and that it will be 5.5 million tons or 86 kilograms per capita if per capita GDP reaches as much as only 1,500 dollars. Table 3.2 shows estimated domestic production and import of steel products.

Table 3.2 DOMESTIC PRODUCTION AND IMPORT OF STEEL PRODUCTS

	Domestic Production	Import
Bar for construction 2/	420	4
Welded tube for piping 1/ 2/	210	140
Galvanized steel sheet 2/	130	20
Steel wire rod	100	50
Tin plate	60	30
Shape steel	40	70
Steel sheet		650
Steel plate		50
Seamless steel tube		15

1/ Partly exported

2/ It is a government policy to maintain national self-sufficiency of reinforcing bar, galvanized steel sheet for roofing and welded tube for ordinary piping.

Steel is produced by the six electric furnaces with total production capacity of 650,000 tons per year while actual production has been declining due to recent recession (356,000 tons, 288,000 tons and 279,000 tons in 1980, 1981 and 1982, respectively). The rate of utilization of the electric furnaces is expected to increase partly due to overall economic recovery and partly due to the reduction of business tax from 7.7 to 3.3 percent in 1983.

It is said that rerolled steel products from electric furnaces are over-supplied because they concur with those using imported steel in the limited domestic market. However, it is sure that the demand for these products will increase in future in response to the wider use of steel frames for construction, implementation of large-scale projects such as those in Eastern Seaboard and growth of steel consuming industries. In the meantime, there is an opportunity to export steel products to the less industrialized surrounding countries such as Burma and Bangladesh. An integrated steel mill was proposed long

before and feasibility studies have been conducted in different sites since 1978. The most recent study by Ministry of Industry suggests that an integrated steel mill with the initial capacity of 1.6 million tons and the final capacity of 2.4 million tons is feasidle to be established in Bang Saphan of Changwat Prachuap Khiri Khan.

Of six electric furnaces, five are located in Samut Prakhan. Their international competitiveness in terms of technology and cost is said to be weak although they have advantages of access both to material scraps and domestic market. While it will be necessary to improve their productivity, Samut Prakhan may not be an appropreate location to think of new investments through reorganization of industries or joint investments.

If it is assumed that national self-sufficiency be increased up to 50 percent, steel production of 2,250,000 to 3,750,000 tons will be necessary. New electric furnace or even an integrated steel mill, if possible, can be developed in an appropreate place in Upper South, Don Sak in particular where deep seaport, water, land and power can be made available without serious bottlenecks, depending on the progress of current proposals such as a steel mill in Prachuap Khiri Khan and a sponge iron plant in Eastern Seaboard. In addition, an attention can be drawn to the possibility of existing and potential local material supply for steel production, including local ore from Nakhon Range, para rubber charcoal for coke, fuel from a possible local refinery at Krabi and scraps from possible ship breaking industries in both Don Sak and Phuket.

3.2 PULP AND PAPER

Paper consumption also reflects the level of economic development of a country. In 1981, per capita consumption of paper is 270 Kg in USA, 200 Kg in Sweden, 197 Kg in Canada, 157 Kg in West Germany, 143 Kg in Japan and 12 Kg in Thailand.

For the total annual paper consumption of about 500,000 tons in the country, 360,000 tons are met by domestic production of two companies. Production capacity of pulp is estimated at 100,000 tons per year and about 300,000 tons of pulp are imported. It is very sure that paper consumption will increase rapidly in future.

However, the most serious constraints to the domestic pulp and paper production is shortage of material due to depleting forest resources, which are now supplemented by bagasse, straw, bamboo and kenaf. While it is necessary to accelerate planting of fast growing trees for pulp, paper and pulp industrial developement using imported materials is more urgent. Surat Thani

can be a candidate location for its rich water resource, if a deep seaport is made available. In the long run, Upper South itself could supply a part of wood materials if reforestration progresses. Upper South can supply other materials necessary for kraft pulp such as limestone, chloride and hydrated lime. Fuel can be supplied by a local refinery possibly in Krabi. Through coastal shipping, caustic soda can be supplied from Eastern Seaboard.

3.3 ELECTRIC AND ELECTRONIC MACHINERIES, EQUIPMENT AND PARTS WITH SPECIAL REFERENCE TO ASSEMBLY OF INTEGRATED CIRCUIT AND LARGE SCALE INTEGRATION

Electric and electronic machines and parts manufacturing is a potential industry in terms of both domestic demand and international competitiveness. Import substitution has been attained to a considerable extent in assembly and parts production of such goods as television, radio, fan, refrigerator, air-conditioner, rice cooker, electric bulks and tubes, batteries, heaters, transformer, wiring device, telephone set and calculators. However, core parts are still dependent on import, especially in audio appliences. Demand for these appliences is expected to grow futher.

Comparatively low level of wage makes these industries internationally cometitive because of their labor intensive nature especially in assembling process. Recently, four large American companies started production of integrated circuits in Thailand. All the products are exported and earned 6.1 billion baht in 1981.

Domestic demand for integrated circuit and large scale integration is as yet small but it will increase rapidly as computors and other electronic devices will be used more widely and a vaiety of goods will be installed with electronic parts.

Electric and electronic industries will have high propensity to be attracted to Upper South, Phuket in particular, for its access to international market, good environment and availability of labor. Phuket will be more advantageous if plastic and metal parts are produced in Surat Thani using the basic plastic materials supplied from Eastern Seaboard and possible electric furnace in Don Sak. Possible industrial types will include integrated circuit, micro processors/telecommunication equipment audio appliences, airconditioner and water purifier. Infrastructure development for tourism and urban development will encourage these industries to be attracted to Phuket especially in the areas with good access to airport.

3.4 SHIP BUILDING

Shipping industry is not much developed in Thailand. Ships are not many and they are old. Ships are used mainly for inland waterway transport and marine shipping is expected to grow from now on as seaports such as those in Mapt Taput, Laem Chabang, Phuket and Songkhla will be in use. In view of expected demand expansion for ships, Ministry of Industry and Board of Investments give high priority on ship building industry to attract foreign investors. A number of European investors have already responded to this government policy. Laem Chabang is regarded as a potential area for large-scale shipbuilding industry in near future.

In Upper South and other parts of the southern region, demand is great for building and reparing fishing boats and saction boats for offshore mining. In future, crane, steel frame and bridge structure will be another products which demand will grow for and ship building industry can cope with by its side job. In Phuket, a Malaysian investor has started a small but modern shipyard to build and repair fishing and saction boats by revitalizing and merging traditional small shipyards.

In the long-run, Don Sak of Surat Thani can be a base for large-scale industry to produce both ships and the steel structure for construction and possibly natural gas production. Combination of shipbuilding, shipbreaking and electric furnace would encourage efficient use of steel materials and diversification of engineering industries.

3.5 SHIP BREAKING

Shipbreaking is now prosperous in Taiwan and Korea, but Thailand has larger comparative advantage because of the industry's labor intensive nature and lower level of wage. It is designated as a priority industry by Board of Investments and 16 investors are applying for investment promotion priviledge, including 10 in Chonburi-Sriracha, 4 in Rayong, one in Samut Prakhan and one in Prachuap Khiri Khan.

In the long-run, however, the industry suits to be located in Upper South together with shipbuilding and electric furnace with development of a deep seaport and experiences of metal working industries.

4. MARKET ANALYSIS (FOREIGN TRADE AND EXPORT MARKET OF INDUSTRIAL PRODUCTS)

4.1 OBJECTIVES AND METHODS

4.1.1 Objectives

One of major problems lying on the way of economic development is how to manage the trade deficits, which has been increasing in 1980's. RTG has paid great efforts to restrain the increase of imports, however, traditional structural feature of foreign trade has made it difficult to improve fundamentally the trade inbalance, that is to say, the export of materials or primarily processed resources could not match the increasing imports of manufactured goods.

RTG has recently stressed the structural readjustment policies, on the top of which the readjustment of the trade structure has been emphasized. Export promotion has been becoming the key issue for the development of national economy directing the NIC's, the promotion of domestically manufactured exports in particular. This is one of reasons, perhaps the most important one,why the export oriented industrialization is given the first priority among policies of RTG.

In order to find out the possibility and the strategy for the export oriented industrialization, an analysis of international trade markets for manufactured goods has to be done.

4.1.2 Methods of Analysis

1) Figuring out the characteristics of the foreign trade of Thailand, in terms of commodities, derecting markets, growing tendencies etc.

2) Comparing the exports from Thailand to various market areas of the world with that from Asian NIC's, namely four tigers of Singapore, Hong Kong, Taiwan and South Korea.

3) Classifing commodities into well-defined groups based on analysis above and identifing promising commodity groups for export to potential markets.

4) Presenting the strategic ideas to promote export oriented industries toward the coming century.

4.2 FOREIGN TRADE OF THAILAND (A GENERAL OBSERVATION)

The National Account presents a general profile of the foreign trade of Thailand in both current price and constant price at the year of 1972. In term of the constant price by the National Account, the exports of goods has grown at a rate of 12.0 percent (11.4 percent by customs data) per annum, while the imports of goods has increased at 6.1 percent (5.8 percent by customs data)

per annum, from 1970 to 1980. In a long term the trade inbalance has been improved.

There can be a relation found between exports (Ex) and GDP, and also between imports (Im) and GDP as follows:

$$\ln (Ex) = \ln (A) + b \ln (GDP)$$

$$A = 0.0009410$$

$$b = 1.4878270$$

$$r^2 = 0.9315410$$

$$\ln (Im) = \ln (A') + b'. \ln (GDP)$$

$$A' = 0.2276915$$

$$b' = 0.9602256$$

$$r^2 = 0.8650999$$

This equation obtained is sufficiently effective to get a ideal feature of exports and imports on the way of economic development of the country. However, in these three or four years after the second oil crisis, Thai economy has experienced a recession, amidst of the worldwide depression. To get a future profile, it had better to take this effect into account. A depression dummy could be put into the account.

If a economic development target to achieve a per capita income level of $2000 in the year of 2000, the equation above produce fugures of exports and imports based on assumed GDP as promising as follows:

	1980	2000	Growth Rate (1980 - 2000)
GDP (in billion baht at 1980 price)	684.9	2,944.0	7.56%
Exports (in billion baht at 1980 price)	132.0	898.8	11.95%
Imports (in billion baht at 1980 price)	190.0	520.9	6.11%

Such a structure as above looks like too promising to be achieved because of widening trade deficits. However, a target to attain the economic development level of NIC's will make it possible to improve the trade inbalance as well as the past experiences of NIC's. Without such improvement of trade balance, the target economic development level could not be achieved.

The most important issue for RTG will be the strategic measures to promote exports, manufactured exports in particular. Then, the potential market of Thai exports will be the greatest concern.

$$\text{Ex (1980-2000)} = \frac{\text{Ex (1970-1980)}}{\text{GDP (1970-1980)}} \times \text{GDP (1980-2000)}$$

$$\text{Im (1980-2000)} = \frac{\text{Im (1970-1980)}}{\text{GDP (1970-1980)}} \times \text{GDP (1980-2000)}$$

$$\text{In.Ex (2000)} = \text{In.Ex(1980)} + 17 \times \text{In.} \left(1 + \text{Ex}_{(1980-2000)}\right)$$

$$\text{In.Im (2000)} = \text{In.Im(1980)} + 17 \times \text{In.} \left(1 + \text{Im}_{(1980-2000)}\right)$$

4.3 STRUCTURE OF IMPORTS BY COMMODITY GROUPS

The most notable characteristic of imports by economic classification is the increase of Crude Oil not in volume but in value because of raising price. It occupied 21.8 percent of total value of imports in 1981, while it was only 4.4 percent in 1970 before the first oil crisis. The payment for the crude oil is the heaviest burden to Thailand as well as other crude importing countries. Except for crude oil, not less than one third of imports are Capital Goods, followed by intermediate products and raw materials, while the share of consumer goods has been decreasing from 20 percent in 1970 to 13 percent in 1980. It is due to the great efforts to substitute the domestic production for imports of consumer goods. (See Tables 4.2 and 4.3, Figure 4.1)

A keen attention will have to be paid to following issues:

(1) Lessen the import of crude oil by improving energy efficiency, substituting crude oil for such sources as natural gas, thermal coal (lignite), hydric energy, solar energy, atomic and biomass. The exploitation of natural gas and domestic crude oil fields might be accelerated.

Table 4.1 EXPORTS, IMPORTS AND GDP IN THE NATIONAL ACCOUNT AT CONSTANT PRICE IN 1972

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Exports	14.1	18.3	21.8	20.3	23.1	22.3	31.0	35.6	38.3	41.7	43.6
of Goods (Ex)	(15.0)*	(18.9)	(22.5)	(21.0)	(23.5)	(22.6)	(31.3)	(35.9)	(38.6)	(42.2)	(44.0)
Imports	31.1	26.5	30.6	38.1	34.9	33.7	35.2	44.1	47.1	56.6	56.3
of Goods (Im)	(31.7)	(26.7)	(30.9)	(38.2)	(35.3)	(34.8)	(35.9)	(43.2)	(46.3)	(53.5)	(55.6)
GDP	150.1	157.1	164.6	180.1	190.0	203.5	221.2	237.2	261.1	276.9	311.3

Note : * Figures in Parenthesis is originated by Customs Office.

TABLE 4.2 IMPORTS BY ECONOMIC CLASSIFICATION (IN MILLION OF CURRENT BAHT)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Consumer Goods	5,229	4,390	4,950	6,311	7,995	8,455	9,418	11,114	12,942	15,933	19,286	22,985
Non-durable	3,486	2,859	3,291	4,066	5,167	3,307	5,586	6,346	7,544	9,343	12,257	13,616
Durable	1,743	1,531	1,659	2,245	2,828	5,148	3,832	4,768	5,398	6,590	7,029	9,369
Intermediate porducts and Raw materrials	6,725	7,764	9,131	13,621	18,370	16,105	20,216	26,921	29,598	43,500	45,312	53,575
For consumer Goods	4,139	4,996	5,880	8,538	11,345	10,318	12,530	16,060	16,937	26,108	28,182	33,716
For capital Goods	2,586	2,768	3,251	5,083	7,025	5,787	7,686	10,861	12,661	17,392	17,130	19,859
Capital Goods	9,371	8,628	9,783	12,826	19,808	22,239	19,405	24,393	31,317	39,902	46,075	56,772
Other Imports	5,684	6,012	7,011	9,426	17,871	20,036	23,838	31,749	35,042	46,826	78,013	83,414
Crude Oil	1,198	1,941	2,432	3,572	10,382	12,076	13,857	16,448	16,527	23,425	39,304	47,241
Others	4,486	4,071	4,579	5,854	7,489	7,960	9,981	15,301	18,515	23,401	38,709	36,173
TOTAL	27,009	26,794	30,875	42,184	64,044	66,835	72,877	94,177	108,899	146,161	188,686	216,746
	(25,811)	(24,853)	(28,443)	(38,612)	(53,662)	(54,759)	(59,020)	(77,729)	(92,372)	(122,736)	(149,382)	(169,505)

Source : Bank of Thailand, Monthly Economic Report.

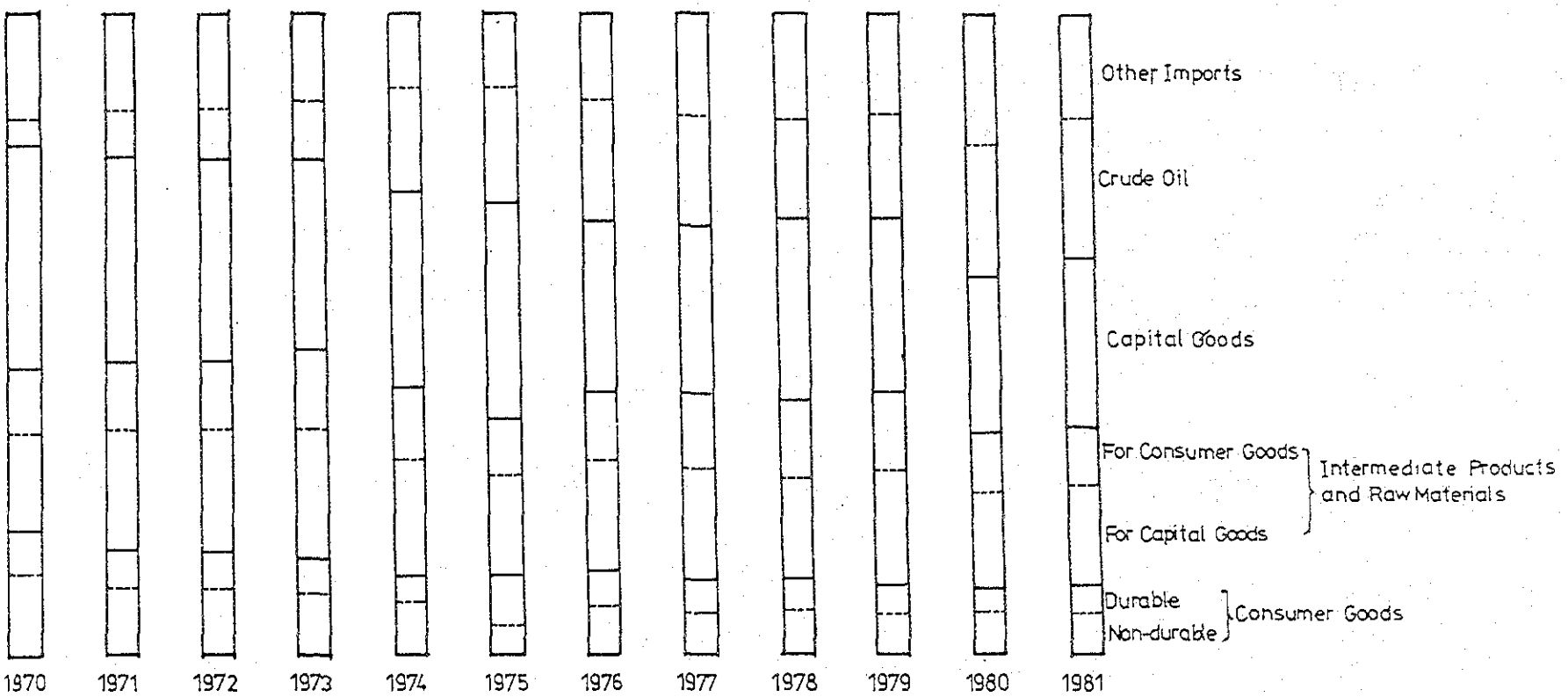
Note : Figures in parenthesis are excluding the import value of crude oil.

TABLE 4.3 DISTRIBUTION OF IMPORTS BY ECONOMIC CLASSIFICATION (PERCENT)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Consumer Goods	19.4 (20.3)*	16.4 (17.7)	16.0 (17.4)	15.0 (16.3)	12.5 (14.9)	12.6 (15.4)	13.0 (16.0)	11.8 (14.3)	11.9 (14.0)	10.9 (13.0)	10.2 (12.9)	10.6 (13.6)
Non-durable	12.9	10.7	10.6	9.7	8.1	4.9	7.7	6.7	6.9	6.4	6.5	6.3
Durable	6.5	5.7	5.4	5.3	4.4	7.7	5.3	5.1	5.0	4.5	3.7	4.3
Intermediate porducts and Raw materrials	24.9 (26.0)	29.0 (31.2)	29.6 (32.1)	32.3 (35.3)	28.7 (34.2)	24.1 (29.4)	27.7 (34.2)	28.6 (34.6)	27.2 (32.0)	29.8 (35.4)	24.0 (30.3)	24.7 (31.6)
For consumer Goods	15.3	18.7	19.1	20.2	17.7	15.4	17.2	17.1	15.6	17.9	14.9	15.5
For capital Goods	9.6	10.3	10.5	12.1	11.0	8.7	10.5	11.5	11.6	11.9	9.1	9.2
Capital Goods	34.7 (36.3)	32.2 (34.7)	31.7 (34.4)	30.4 (33.2)	30.9 (36.9)	33.3 (40.6)	26.6 (32.9)	25.9 (31.4)	28.7 (33.9)	27.3 (32.5)	24.4 (30.9)	26.2 (33.5)
Other Imports	21.0	22.4	22.7	22.3	27.9	30.0	32.7	33.7	32.2	32.0	41.4	38.5
Crude Oil	4.4	7.2	7.9	8.5	16.2	18.1	19.0	17.5	15.2	16.0	20.8	21.8
Others	16.6 (17.4)	15.2 (16.4)	14.8 (16.1)	13.8 (15.2)	11.7 (14.0)	11.9 (14.5)	13.7 (16.9)	16.2 (19.7)	17.0 (20.1)	16.0 (19.1)	20.6 (25.9)	16.7 (21.3)
TOTAL	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)

* Figures in parenthesis are excluding imports of crude oil.

FIGURE 4.1 IMPORTS STRUCTURE BY ECONOMIC CLASSIFICATION



(2) Efforts to substitute domestic manufacturing for imports will have to be continued in more effective ways.

(3) Promotion of industries, particularly producing intermediate goods will have to be strengthened by diversification of industrial structure.

(4) Promotion of further processing of domestic resources, which are exported in primarily processed, will contributed a lot to the improvement of trade structure.

(5) In order to meet the increasing demand for such basic materials as basic chemicals, pulp & paper, and iron & steel, some basic industrial complexes have to be developed after the eastern seaboard on a later stage of industrialization.

4.4 STRUCTURE OF EXPORTS BY COMMODITY GROUPS

The most of marchandized exports of Thailand has been generated from agricultural products. Food and beverage including tobacco have occupied arround a half of exports. From the highest percentage of 60.4 in 1975, its share in exports value has gradually been declined, while the share of manufactured goods increasing continuously through 1970s. It reached 35.1 percent of total value of exports. (See Tables 4.4 and 4.5 and Figure 4.2)

However, the large parts of manufactured goods are also based on agricultural products such as rubber, marine fish, fruits etc. Although traditional commodities such as rice, rubber, sugar, maize, tapioca, mung beans are still now major items of exports, and even in future importance of these commodities for Thai exports will not be eliminated, it will be the direction of the Thai exports to raise the manufactured ones. One of reasons exist in the constraint of available land area for cultivation. And these productions have been greatly affected by weather conditions. In addition to these, some of resources have already been exhausted. Some of their markets has been alternated by other resources.

From the strategic viewpoint, the following issues will be given attention to.

(1) Improvement of productivity and quality of traditional primary products to meet the foreign markets. Some of these are claimed of quality by directing countries.

(2) Promotion and further processing of domestic resources into manufactured goods, into manufactured exports in particular, because exported materials in primarily processed has been imported to Thailand in manufactured products.

(3) In an early stage, labour intensive industries will be promising as manufactured export items, because NIC's will not be competitive any more in areas of labour intensive products. They have to move into the competition with industrialized countries in the hightech industrial products.

TABLE 4.4 VALUE OF MERCHANDISE EXPORTS BY COMMODITY GROUPS (MILLION OF CURRENT BAHT)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Food	6,957 (47.1)	8,243 (47.7)	11,212 (49.9)	13,661 (42.4)	27,640 (55.5)	26,599 (59.1)	35,429 (58.3)	40,239 (56.5)	30,617 (48.9)	50,087 (46.3)	57,338 (44.5)	80,039 (52.3)
Beverages & Tobacco	206 (1.4)	240 (1.4)	285 (1.3)	328 (1.0)	459 (0.9)	579 (1.3)	706 (1.2)	931 (1.3)	1,173 (1.4)	1,266 (1.2)	1,393 (1.1)	1,758 (1.2)
Crude materials	4,262 (28.9)	4,588 (26.6)	4,806 (21.4)	8,411 (26.1)	9.111 (18.3)	6,804 (15.1)	9,566 (15.7)	10,965 (15.4)	12,571 (15.1)	17,862 (16.5)	19,095 (14.3)	16,722 (10.9)
Mineral Fuels & Rubricant	45 (0.3)	130 (0.7)	269 (1.2)	414 (1.3)	386 (0.8)	249 (0.5)	120 (0.2)	20 (0.0)	14 (0.0)	33 (0.0)	86 (0.1)	36 (0.0)
Animal & Vegatable Oils &Fats	14 (0.1)	18 (0.1)	9 (0.0)	34 (0.1)	43 (0.1)	43 (0.1)	39 (0.1)	26 (0.1)	40 (0.1)	22 (0.0)	222 (0.2)	232 (0.2)
Chemicals	33 (0.2)	44 (0.2)	75 (0.3)	162 (0.5)	335 (0.7)	243 (0.5)	268 (0.4)	298 (0.4)	444 (0.5)	722 (0.7)	936 (0.7)	1,191 (0.8)
Manufactured goods	2,188 (14.8)	2,508 (14.5)	3,475 (15.4)	5,861 (18.2)	7,977 (16.0)	6,419 (14.3)	9,336 (15.4)	11,963 (16.8)	17,479 (21.7)	23,532 (21.7)	29,474 (22.1)	26,941 (17.6)
Machinery	15 (0.1)	28 (0.2)	46 (0.2)	78 (0.2)	313 (0.6)	573 (1.3)	1,231 (2.0)	1,713 (2.4)	2,719 (3.3)	3,972 (3.7)	7,618 (5.7)	7,662 (5.0)
Micellaneous Manufacture goods	59 (0.4)	97 (0.6)	332 (1.5)	946 (2.9)	1,340 (2.7)	1,582 (3.5)	2,432 (4.0)	2,750 (3.9)	4,213 (5.1)	6,149 (5.7)	8,467 (6.4)	11,731 (7.7)
Micellaneous transactrions & commodities	471 (3.2)	781 (4.5)	1,107 (4.9)	1,251 (3.9)	1,034 (2.1)	983 (2.2)	1,062 (1.7)	1,492 (2.1)	1,982 (2.4)	2,691 (2.5)	3,777 (2.8)	2,650 (1.7)
Re-exports	522 (3.5)	598 (3.5)	875 (4.9)	1,080 (3.4)	1,161 (2.3)	933 (2.1)	608 (1.0)	801 (1.1)	1,813 (2.2)	1,843 (1.7)	2,791 (2.1)	4,039 (2.6)
TOTAL	14,772 (100.0)	17,275 (100.0)	22,491 (100.0)	32,226 (100.0)	49,799 (100.0)	45,007 (100.0)	60,797 (100.0)	71,198 (100.0)	83,065 (100.0)	108,179 (100.0)	133,197 (100.0)	153,001 (100.0)

Source : Bank of Thailand, Monthly Economic Report

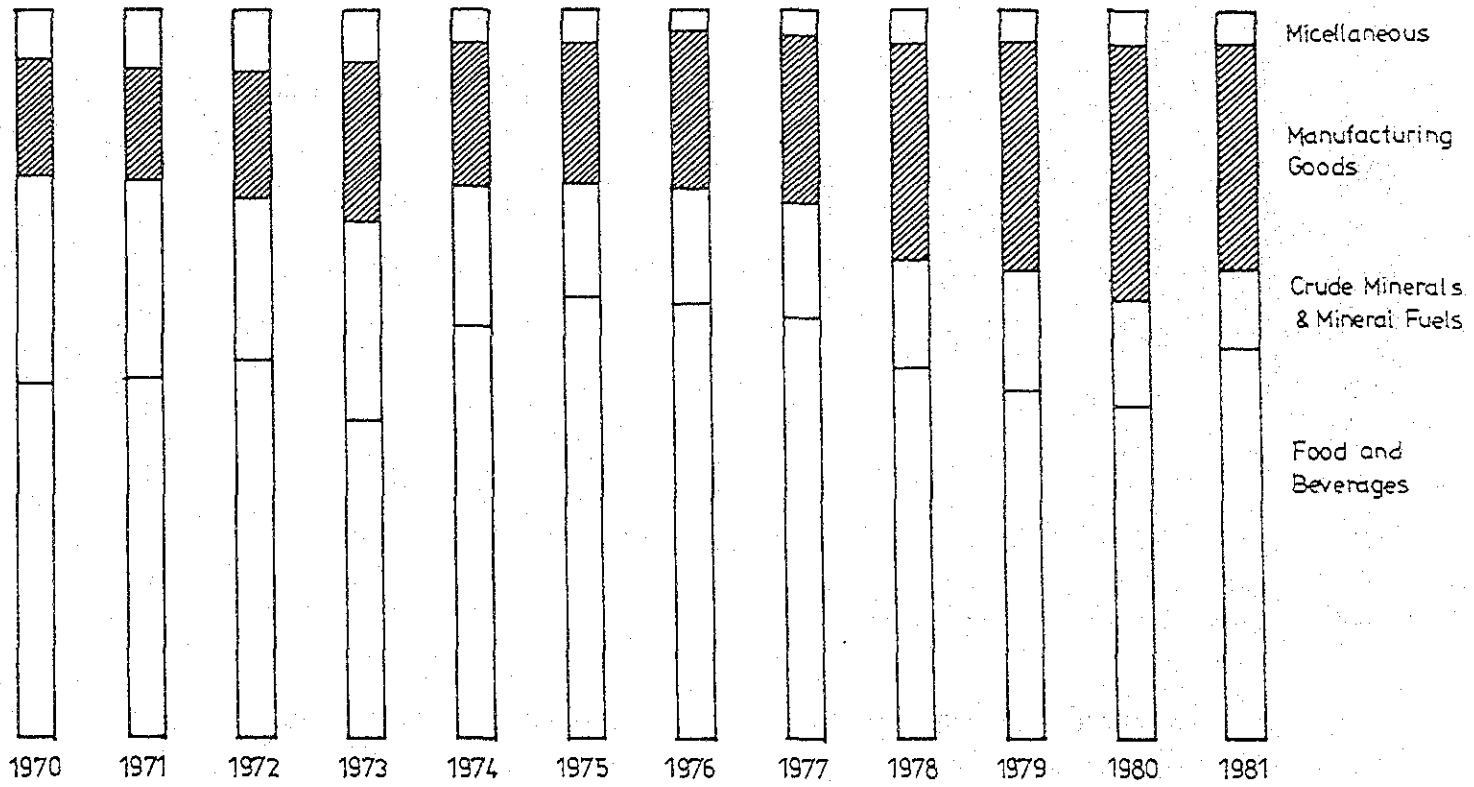
Note : Figures in parenthesis are the shares to the value of total exports

TABLE 4.5 STRUCTURE OF MERCHANDISE EXPORTS BY MAJOR COMMODITY GROUPS (PERCENT)

	1970	1971	1972	1973	1974	1975	1976	1978	1979	1980	1981	
Food & Beverage	48.5	49.1	51.2	43.4	56.4	60.4	59.5	57.8	50.3	47.5	45.6	53.5
Crude Minerals & Mineral Fuels	29.2	27.3	22.6	27.4	19.1	15.6	15.9	15.4	15.1	16.5	14.4	10.9
Manufacturing Goods	15.6	15.6	17.4	21.9	20.1	19.7	21.9	23.6	30.0	31.8	35.1	31.3
Micellaneous	6.7	8.0	8.8	7.3	4.4	4.3	2.7	3.2	4.6	4.2	4.9	4.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source : TABLE 16.3.1

FIGURE 4.2 STRUCTURE OF MERCHANDISE EXPORT BY MAJOR COMMODITY GROUPS



(4) The experience of rapid growth by NIC's is not effective for LDC's to follow in the same way. For every item in the world trade markets has to bear more or less advanced technology. For instance almost all of machine and equipment install integrated circuits or micro-processors, by which they can do more efficient works than ever. So the reserch and development (R & D) of newly developed technology will be necessarily required for industrialization and export promotion of less developed countries.

4.5 EXPORTS AND IMPORTS BY AREAS OF THE WORLD

Thai imports and exports are shown on Figure 4.3 through 4.14 with various Areas of the World. According to these figures Asian countries have been the most important trade partners of Thailand. Figures are including the import of crude oil from the Middle East which is a part of "other asia" in this analysis. However, in the late 1970s exports to Europe and North America has been rapidly increasing, while the growth rate of exports to Japan, which is still now the largest trade partner of countries in the world, has hit a plateau these several years. Particularly the trade with Europe has recorded the surplus of Thai exports after 1975, increasingly preferable to Thailand. The trade with Africa has also been preferable in the late 1970s next to Europe.

An area of the Asia should be broken into five, the Middle East, Japan, "four tigers", China Mainland and the rest of Asian countries. (In later phase of analysis, the rest of Asian countries had better been divided into the western and the eastern of Thailand). The "four tigers" means four countries, Singapore, Hong Kong, Taiwan and South Korea, which are known as Asian NIC's.

Before analysis, the import and export of commodities belonging to a category of "Mineral Fuels, Lubricant, etc." had better been put aside, because the most of them are crude oil and its biproducts. As shown on Table 4.6 the trade inbalance of Thailand with the World was the greatest arround 1970 and it has been improved a great deal. With the Asia, the trade of Thailand moved to surplus during the early half of 1970s, enjoying 260 million dollars of surplus in 1980.

By areas and countries in the Asia, the export exceeded import with Fout Tigers, Middle East and Other Asia, while the trade balance was unfavorable with China Mainland and with Japan in particular in 1980. Even with Four Tigers, Thailand has been enjoying surplus in the trade, if the imports of Mineral Fuels and Lubricants were excluded. The share of import from the Asia for the trade of Thailand decreased in late 1970s, after increased up to the middle of 1970s, and exports to the Asia has gradually been declined. It means that the foreign trade of Thailand has been getting to diverse to such various market as the Europe, North America, Africa and the Eastern Bloc Countries. Although the trade relation between Japan is the greatest among countries, its share has been decreasing and moved to other countries even within Asia. These tendencies might

be stronger than ever in future. This is a new trend of diversification of foreign trade in term of countries. Therefore the strategic foreign policy of RTG will have to be adjusted to areas or countries, because the economic structure and situation differ from country to country.

In general, major points of trade development can be classified as follows by areas:

i. Relation with Developed Countries (Japan, Europe, North America) America)

ii. Relation with NIC's particularly with Asian NIC's (Four Tigers)

iii. Relation with LDC's particularly with Neighbouring Asian Countries

iv. Relation with Middle East

Table 4.6 FOREIGN TRADE OF THAILAND
(EXCLUDING MINERAL FUELS & LUBRICANT)

(in thousand dollars)

	1965	1970	1975	1980
Exports	704,585	1,180,244	2,571,496	6,574,363
Imports	616,711	705,279	2,182,001	6,464,233

Table 4.7 TRADE WITH ASIA AND COUNTRY GROUP IN ASIA
(EXCLUDING MINERAL FUELS & LUBRICANT)

(in thousand dollars)

		1965	1970	1975	1980
Japan	Im	247,416(80.5%)	481,119(85.1%)	1,026,256(82.0%)	1,942,445(65.4%)
	Ex	112,928(27.2%)	181,130(41.4%)	609,400(42.7%)	979,029(30.3%)
Four Tigers	Im	43,243(14.1%)	28,214(5.0%)	65,775(5.3%)	352,794(11.9%)
	Ex	82,319(19.8%)	103,400(23.6%)	367,184(25.8%)	871,877(27.0%)
Middle East	Im	1,273(0.4%)	1,800(0,3%)	23,214(1.9%)	35,857(1.2%)
	Ex	15,864(3.8%)	23,631(5.4%)	87,606(6.1%)	459,860(14.3%)
China Mainland	Im	-	2(0.0%)	11,151(0.9%)	175,860(5.9%)
	Ex	-	-	19,203(1.3%)	123,584(3.8%)
Other Asia	Im	15,275(5.0%)	54,102(9.6%)	124,423(9.9%)	462,534(15.6%)
	Ex	204,356(49.2%)	129,667(29.6%)	342,643(24.0%)	794,762(24.6%)
TOTAL	Im	307,207(100.0%)	565,235(100.0%)	1,250,819(100.0%)	2,969,490(100.0%)
	Ex	415,467(100.0%)	437,828(100.0%)	1,426,036(100.0%)	3,229,112(100.0%)

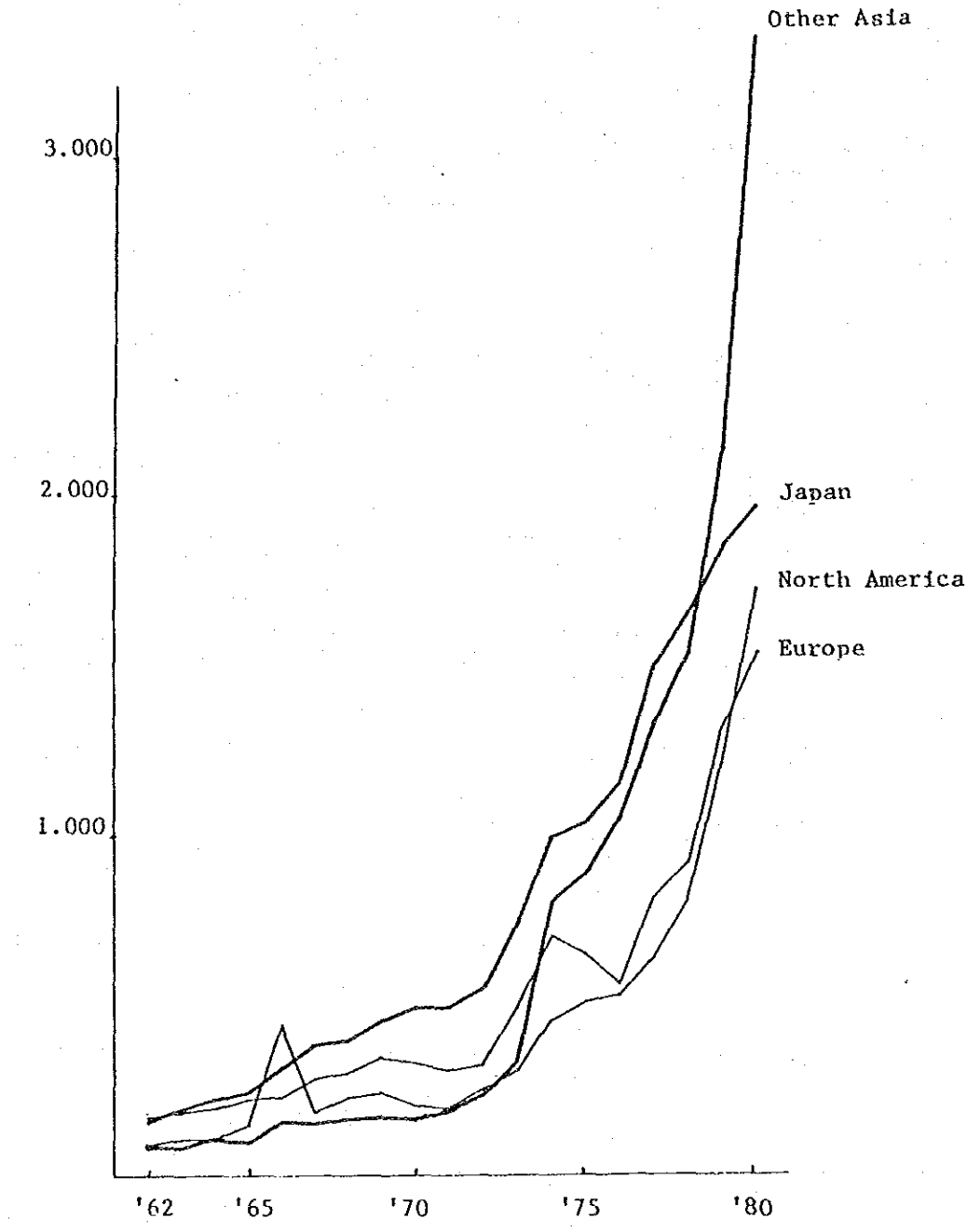


Fig. 4.3 THAI IMPORTS BY ORIGINATING AREAS (1962 - 1980)

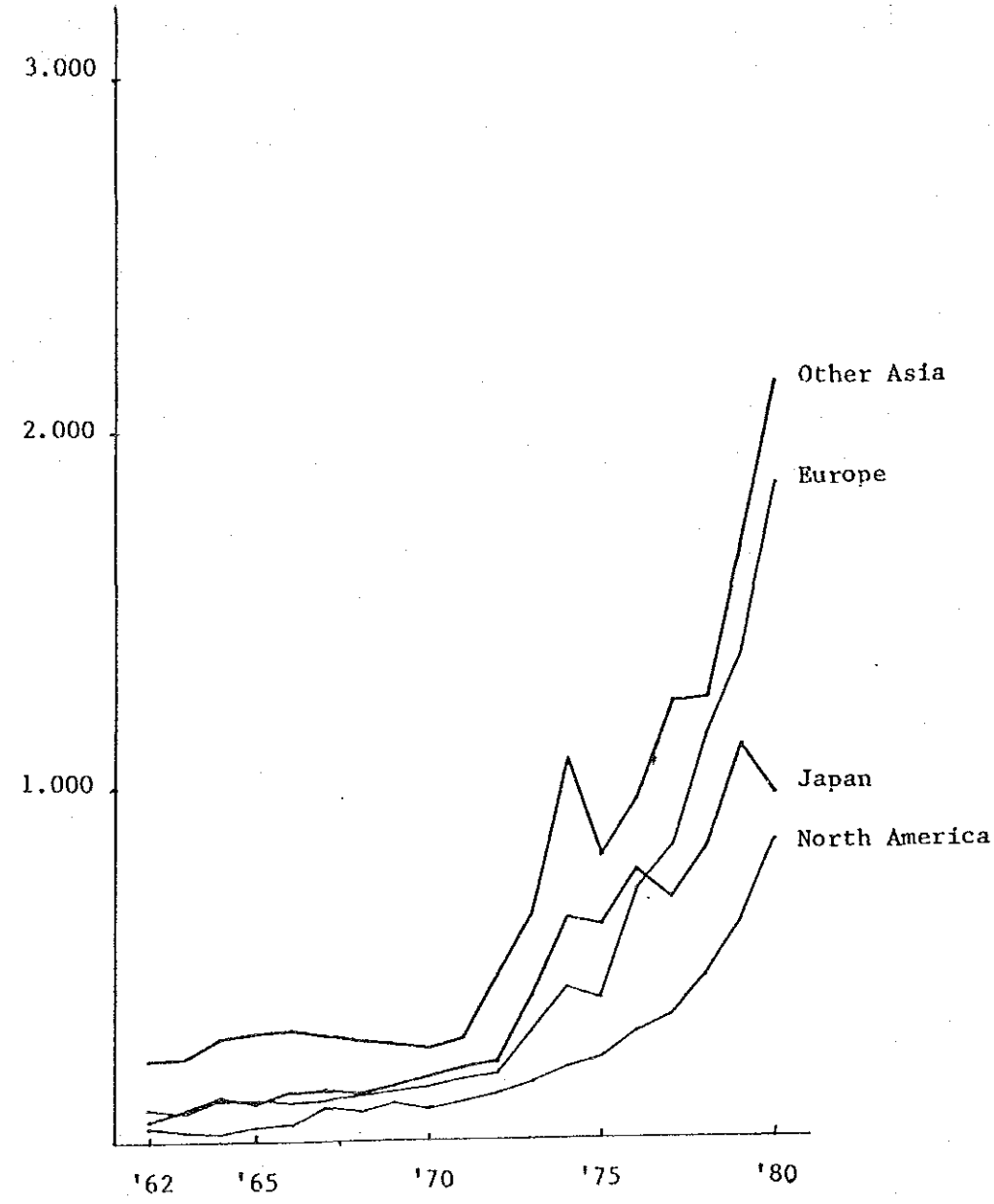
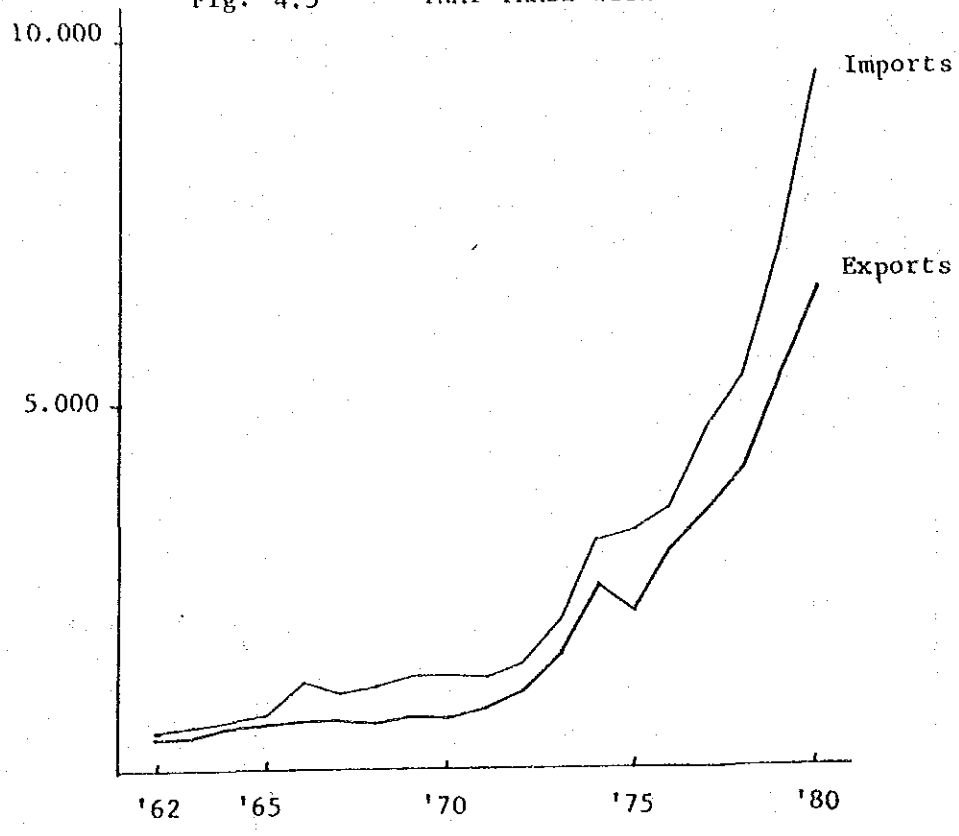


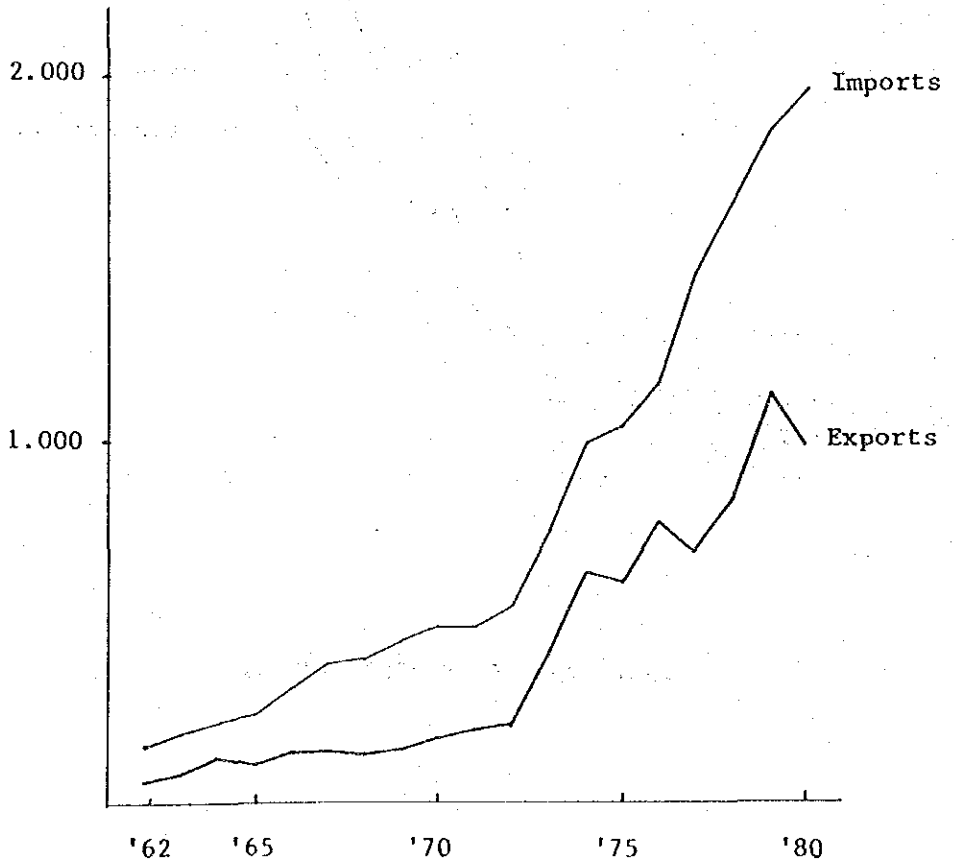
Fig. 4.4 THAI EXPORTS BY DIRECTING AREAS

Fig. 4.5 THAI TRADE WITH THE WORLD



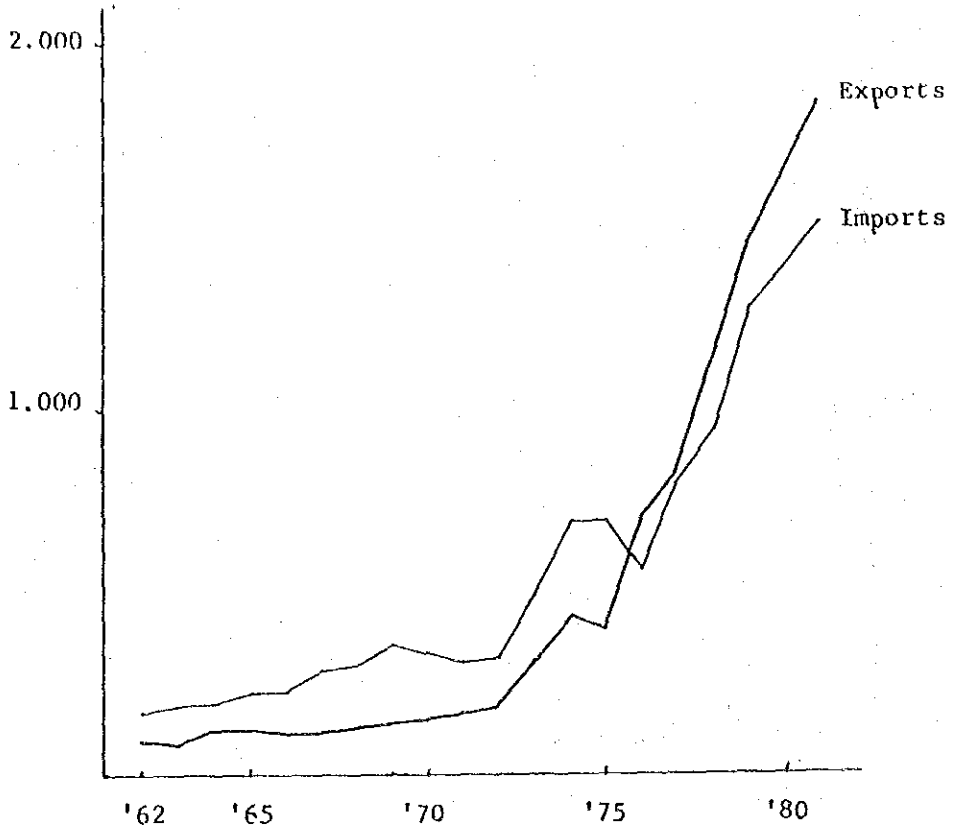
(thousand US$)

Fig. 4.6 THAI TRADE WITH JAPAN



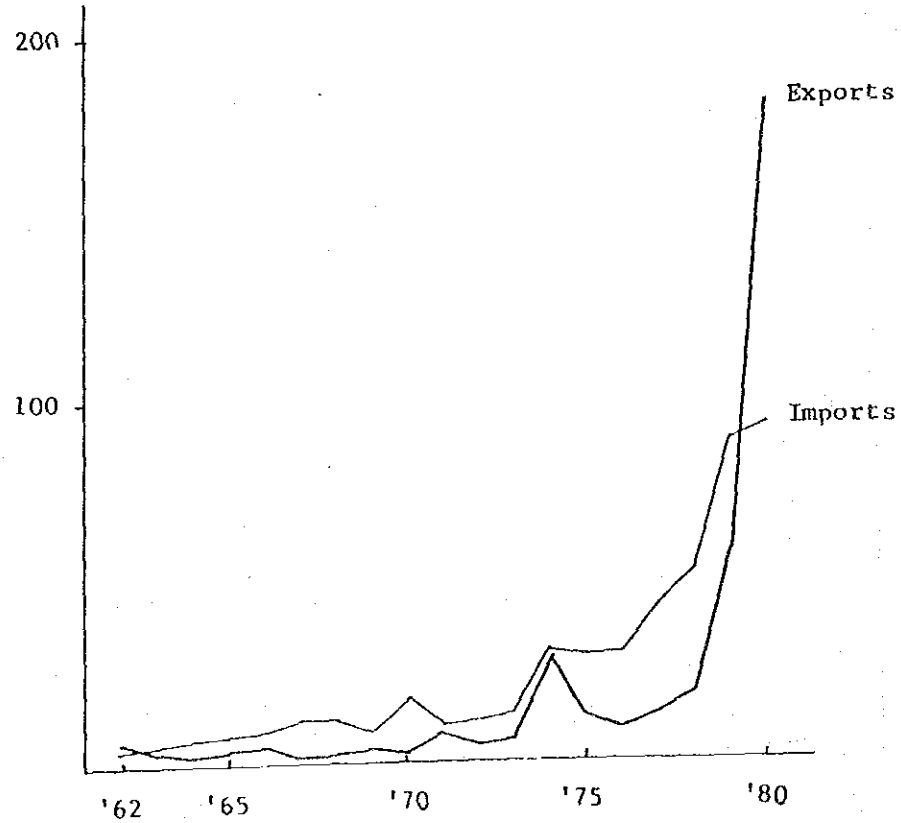
(thousand US$)

Fig. 4.7 THAI TRADE WITH EUROPE



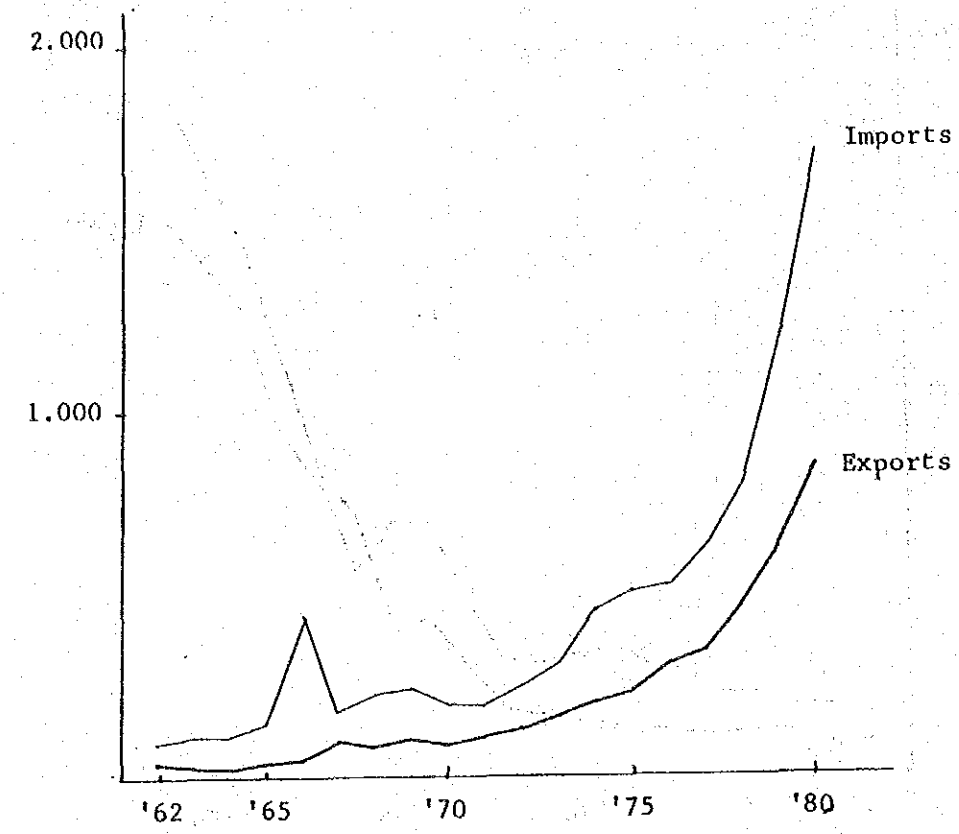
(thousand US$)

Fig. 4.8 THAI TRADE WITH U.S.S.R. & EASTERN EUROPE



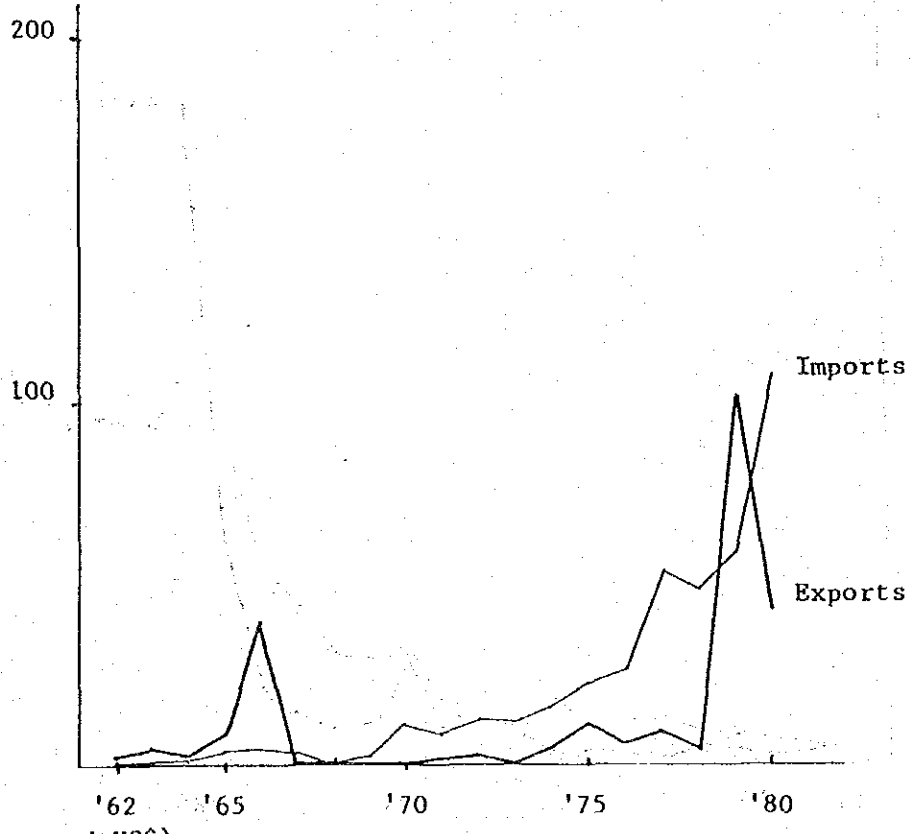
(thousand US$)

Fig. 4.9 THAI TRADE WITH NORTH AMERICA



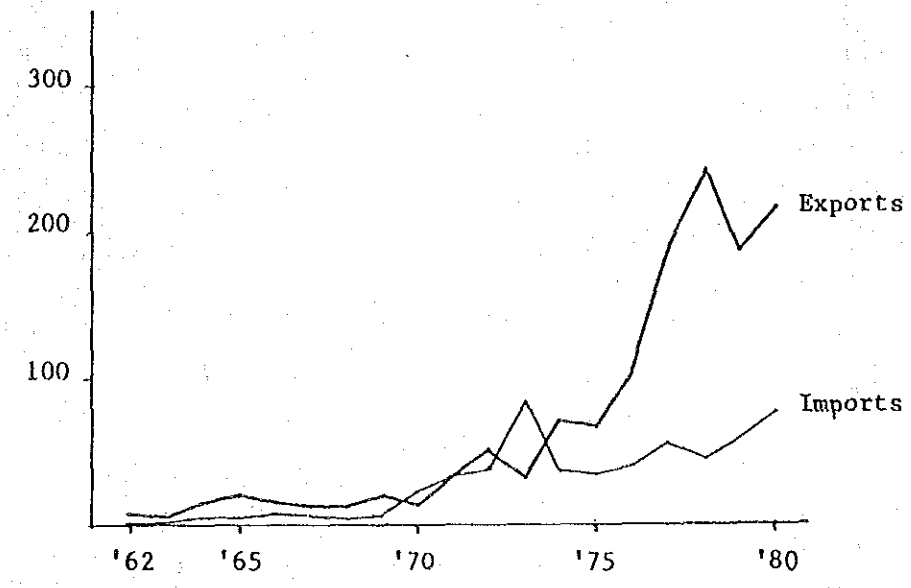
(thousand US$)

Fig. 4.10 THAI TRADE WITH CENTRAL & SOUTH AMERICA



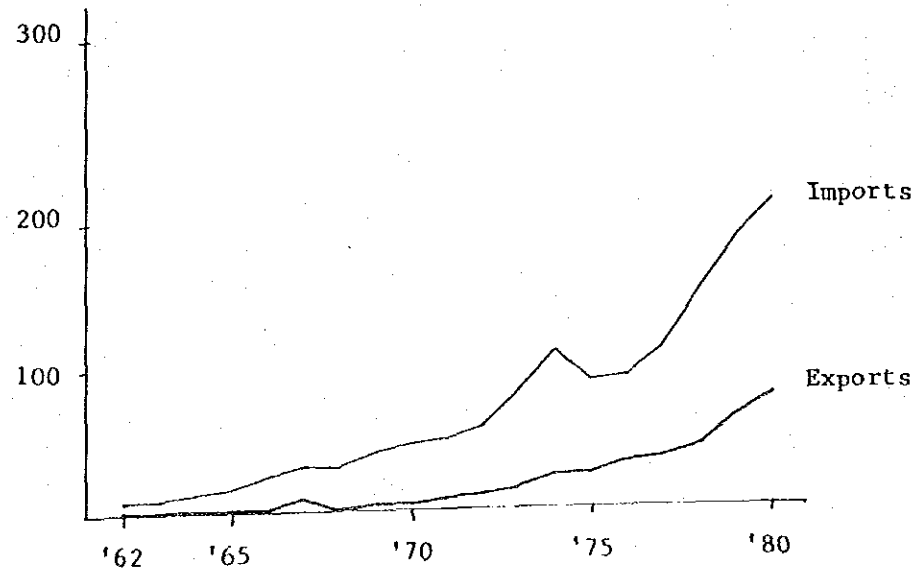
(thousand US$)

Fig. 4.11 THAI TRADE WITH AFRICA



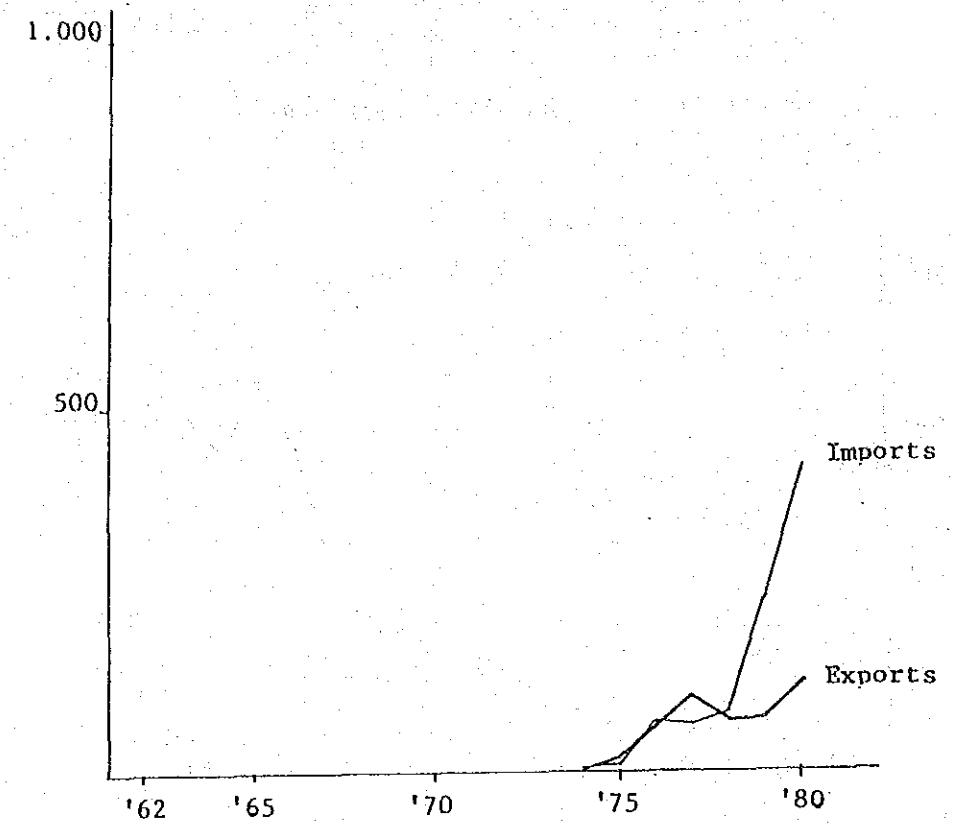
(thousand US$)

Fig. 4.12 THAI TRADE WITH OCEANIA



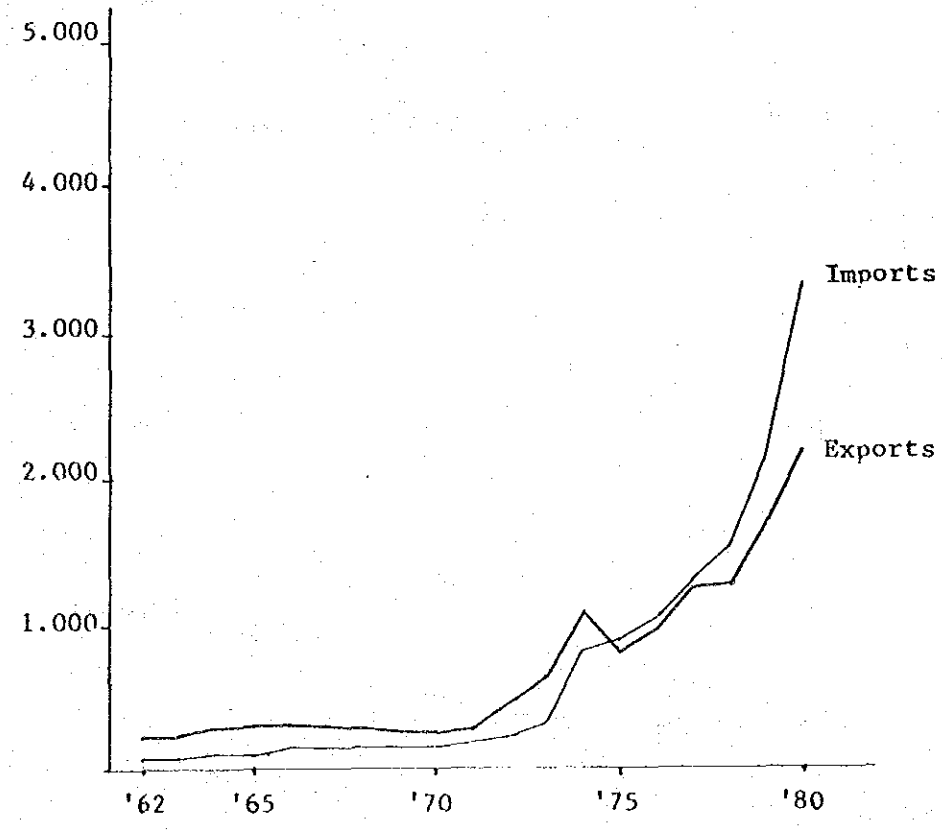
(thousand US$)

Fig. 4.13 THAI TRADE WITH MAIN LAND CHINA



(thousand US$)

Fig. 4.14 THAI TRADE WITH OTHER ASIA



(thousand US$)

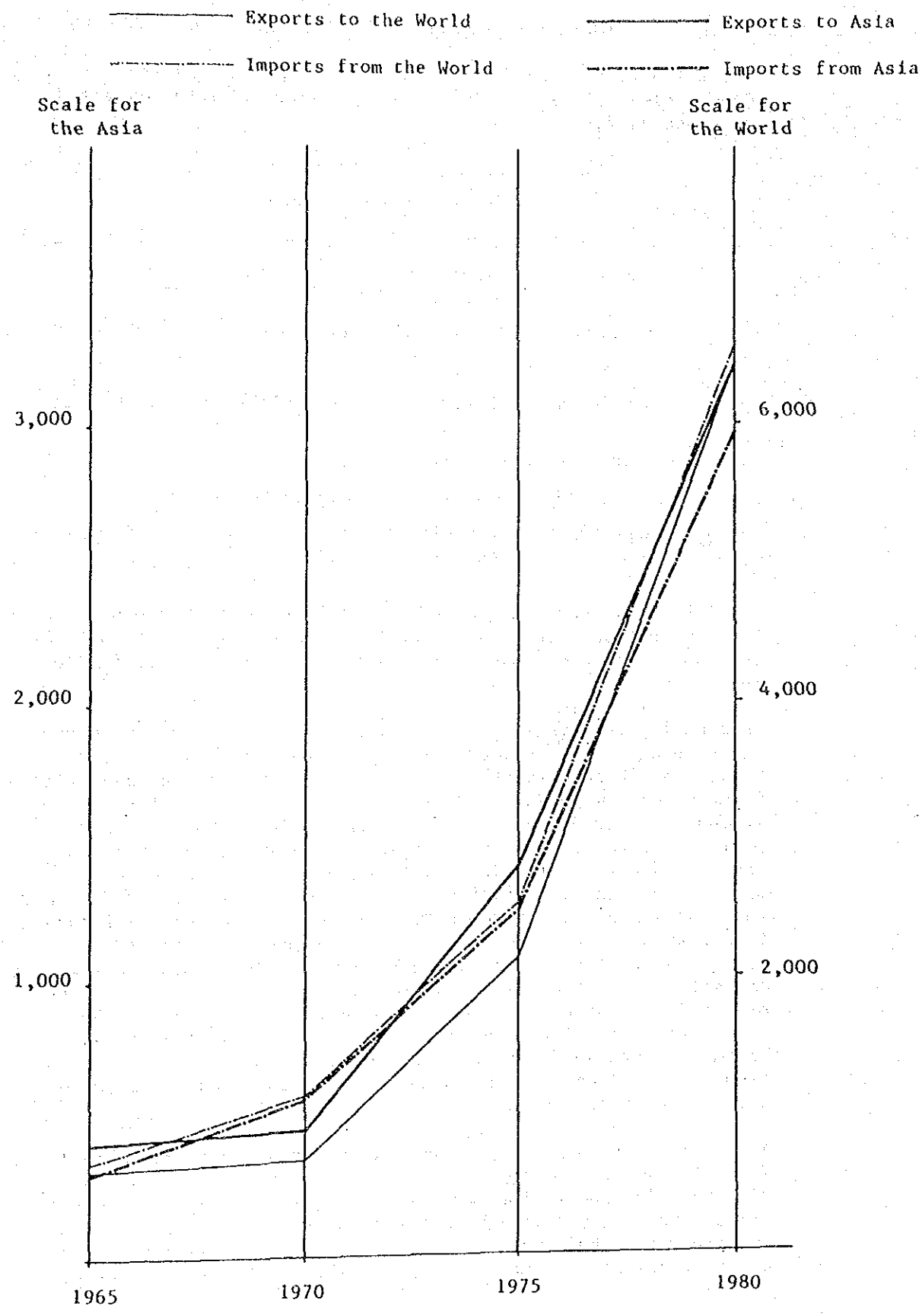


Fig. 4.15 TRADE EXCLUDING MINERAL FUELS AND LUBRICANTS

4.6 EXPORTS AND IMPORTS BY COMMODITIES AND BY AREAS OR COUNTRIES

According to the Standard Classification of International Trading Commodities (SITC), commodities are classified into ten major sections as follows:

Section 1	Food and Live Animals
Section 2	Beverages and Tobacco
Section 3	Crude Materials, Inedible except Fuels
Section 4	Mineral Fuels, Lubricants and Related Materials
Section 5	Animal and Vegetable Oils and Fats
Section 6	Chemicals
Section 7	Manufactured Goods Classified Chiefly by Material
Section 8	Machinery and Transport Equipments
Section 9	Miscellaneous Manufactured Articles
Section 10	Commodities and Transactions not Classified According to Kind

At first these sections can be gathered into three groups, section 1 through section 5 into the group 1 (materials) and section 6 through section 9 into the group 2 (manufactured goods) and section 10 into group 3.

As a whole, the foreign trade of Thailand has a accurate characteristic with those commodity groups above, that is, the trade balance has been characterized by the balance between the deficits in manufactured goods (group 2) and the surplus of materials (group 1). However, the share of manufactured products (group 2) against the total exports has rapidly increased, that is, from merely 5.9 percent in 1965, to 16.4 percent, 20.3 percent and 35.3 percent in 1970, 1975 and 1980 respectively. It can be said that the export structure of Thailand has changed toward industrialization. It seems to be a point of no-return toward the industrialization of the national economy. In the import structure, the material portion has been expanding due to the heavy burden of crude oil import. The exploitation of domestic petroleum resources, natural gas and domestic crude oil, will bring an enormous improvement of trade structure and make it possible to import more advanced technologies and capital goods to develop domestic manufactured export.

As described before, the structural change was remarkable in 1980s. Then it can be observed by areas or countries as below. Group 2's share in imports has been decreasing except for with Oceania, Africa, North-, Central-, and South America, the most of which are minor for Thai import, while the share of Group 2 (manufactured goods) in the export has grown almost with every market,

Table 4.8 IMPORTS AND EXPORTS BY COMMODITY GROUPS

(thousand dollars)

	(Im) Imports	(Ex) Exports	(Ex) - (Im) Balance
(1965) TOTAL	770,058	620,851	△ 149,207
Group 1 (1-5)	142,296	571,688	429,392
Group 2 (6-9)	582,341(75.6%)	35,864(5.8%)	△ 546,477
Group 3 (10)	45,421	13,299	△ 32,122
(1970) TOTAL	1,293,416	710,259	△ 583,157
Group 1 (1-5)	249,488	556,063	306,575
Group 2 (6-9)	991,709(76.7%)	116,663(16.4%)	△ 875,046
Group 3 (10)	52,220	37,533	△ 14,687
(1975) TOTAL	3,279,415	2,195,333	△ 1,084,082
Group 1 (1-5)	1,044,752	1,684,165	639,413
Group 2 (6-9)	2,167,474(66.1%)	446,567(20.3%)	△ 1,720,907
Group 3 (10)	67,188	64,602	△ 2,586
(1980) TOTAL	9,450,277	6,505,304	△ 2,944,973
Group 1 (1-5)	3,839,484	3,951,870	112,386
Group 2 (6-9)	5,007,965(53.0%)	2,294,506(35.3%)	△ 2,713,469
Group 3 (10)	602,839	258,929	△ 343,910

Table 4.9 IMPORTS AND EXPORTS BY COMMODITY GROUPS AND BY AREAS OR COUNTRIES

		Group 1	Group 2	Group 3
With Japan				
Import from =	1970	2.8%	95.9%	1.3%
	1981	3.9%	94.9%	1.2%
Export to =	1970	92.4%	3.9%	3.7%
(998) 1/	1981	18.9%	19.5% (195)	1.6%
With China Mainland				
Import from =	1975	52.2%	47.7%	0.1%
	1981	58.5%	41.1%	0.4%
Export to =	1975	100.0%	-	-
(187)	1981	88.7%	11.1% (21)	0.2%
With Four Tigers				
Import from =	1970	34.8%	58.5%	6.7%
	1981	69.5%	28.3%	2.2%
Export to =	1970	89.3%	6.7%	4.0%
(1.037)	1981	52.0%	38.7% (401)	9.3%
With Middle East				
Import from =	1970	98.3%	1.5%	0.2%
	1981	98.9%	1.1%	0.0%
Export to =	1970	98.1%	1.7%	0.2%
(620)	1981	72.8%	26.8% (165)	0.4%
With Other Asia				
Import from =	1970	41.5%	55.2%	3.3%
	1981	60.4	38.7%	0.9%
Export to =	1970	81.0%	16.3%	2.7%
(727)	1981	76.3%	21.5%(156)	2.2%
With Oceania				
Import from =	1970	40.6%	55.3%	4.1%
	1981	35.8%	62.2%	2.0%
Export to =	1970	38.6%	36.6%	24.8%
(90)	1981	44.2%	51.3% (46)	48.7%

(cont'd)

Note 1/ Figures in Parenthesis are the value of export in 1981.

		Group 1	Group 2	Group 3
With Africa				
Import from =	1970	87.8%	12.1%	0.1%
	1981	55.4%	44.5%	0.1%
Export to =	1970	92.2%	5.9%	1.9%
(357)	1981	94.0%	5.7% (20)	0.3%
With North America				
Import from =	1970	25.3%	61.5%	13.2%
	1981	24.0%	64.6%	11.4%
Export to =	1970	34.3%	59.4%	6.3%
(941)	1981	40.0%	55.3% (520)	4.7%
With Central and South America				
Import from =	1970	94.3%	5.4%	0.3%
	1981	45.2%	54.6%	0.2%
Export to =	1970	63.7%	21.6%	14.7%
(26)	1981	71.2%	28.2% (7)	0.6%
With Europe				
Import from =	1970	11.2%	86.5%	2.3%
	1981	12.6.%	79.6%	7.8%
Export to =	1970	75.8%	19.2%	5.0%
(1.695)	1981	56.5%	39.3% (676)	3.6%
With USSR & Eastern Europe				
Import from =	1970	0.5%	98.9%	0.6%
	1981	13.2%	85.8%	1.0%
Export to =	1970	99.5%	-	0.5%
(354)	1981	99.3%	0.6% (2)	0.1%

except with Africa, North America. But the share of manufactured export to the North America is very high and is 55.3 percent of export total. Then the major market of manufactured export for Thailand are Europe (676 million dollar in 1981), North America (520 million), Four Tigers (401 million), Japan (195 million), Middle East (165 million) and Other Asia (156 million) accordingly.

4.7 MARKETS OF MAJOR MANUFACTURED EXPORTS

Among ten sections in ISTC code, the distribution ratio of sections on Table 4.11 has rised and the growth rate of export value of those has also exceeded the average growth of export. Although the share of Miscellaneous Manufactured Articles and Machinery & Transport Equipment are rather minor than that of Food & Live Animals and Crude Materials (10.9% of export value in 1981), the growth rate of export value in these manufactured commodity section has enormously rised.

Hereinafter commodities and their market are observed for three major sections of Gode 8, Code 7 and Code 6 by ISTC classification. Exports by commodities in two digits classification are shown on Table 4.10.

1) Market of Miscellaneous Manufactured Articles

Markets of commodities in this section have slightly changed. In 1965 Four Tigers was the largest market followed by North America and Other Asia. However in 1981 Europe is the largest followed by North America, Middle East, Four Tigers and Japan accordingly.

The commodities have also changed during 1970s. In 1970 "other miscellaneous articles not classified elsewhere" occupied the largest share in this section. But in 1980 "Clothing" become the largest commodity followed by "Miscellaneous Manufactured Arcticles N.E.S.", "Footwear" and "Furniture". The market of "Clothing" has shifted to Europe and Middle East though the North America is still a large market. The markets of "Footwear" are Middle East, North America and Europe in 1981. They were "Four Tigers", "Europe" and "North America" in 1970.
The markets of "Furniture" are Europe, North America, Japan and Four Tigers in 1981, while they were Japan, Other Asia, North America and Four Tigers in 1970.

(Exports of Miscellaneous Manufactured Articles by Sub-sections (in thousand dollars))

	1970	1981
Sanitaly, Heating, Lighting Equipment	61	5,280
Furniture	22	32,871
Travel goods, Handbags, etc.	39	16,454
Clothing	807	343,829
Footwear	11	43,591
Instruments, Cameras, Watches	1,167	30,843
Miscellaneous Manufactured Articles, NES.	2,321	101,104

(Markets of "Sanitaly, Heating, Lighting Equipments")

1970		1981	
Other Asia	72.1%	Four Tigers	53.3%
Four Tigers	27.9%	Other Asia	16.7%
		North America	12.8%
		Europe	9.5%
		Oceania	6.4%

(Markets of "Furniture")

1970		1981	
Japan	31.9%	Europe	31.9%
Other Asia	22.7%	North America	25.8%
North America	18.2%	Japan	19.1%
Four Tigers	13.6%	Four Tigers	16.1%
Europe	9.1%	Middle East	4.1%

(Markets of "Travel Goods, Handbags, etc")

1970		1981	
Other Asia	46.1%	Europe	36.6%
North America	33.2%	Four Tigers	22.6%
Japan	10.6%	Oceania	19.8%
		North America	9.3%
		Middle East	8.7%

(Markets of "Clothing")

1970		1981	
North America	70.9%	Europe	42.5%
Europe	8.1%	North America	26.8%
Four Tigers	7.4%	Middle East	19.1%
Other Asia	6.4%	Four Tigers	4.3%

(Markets of "Footwear")

1970		1981	
Other Asia	72.7%	Middle East	41.0%
North America	18.2%	North America	39.9%
Europe	9.1%	Europe	12.5%

(Markets of "Instrucments, Cameras and Watches")

1970		1981	
Europe	68.7%	Four Tigers	45.2%
Four Tigers	18.2%	Europe	23.5%
Europe	9.1%	North America	9.3%
		Middle East	6.8%
		Japan	6.5%

(Markets of "Miscellaneous Manufactured Articles, NES")

1970		1981	
Four Tigers	26.1%	North America	34.8%
Europe	20.4%	Europe	33.0%
North America	18.5%	Four Tigers	12.0%
Oceania	15.5%	Japan	6.2%
		Middle East	5.0%

2) Markets of Machinery, Transport Equipment

For this section as a whole, Asian countries, Four Tigers in particular, have been the major market for Thai export as shown below.

1965		1970	
Other Asia	42%	Other Asia	37%
Japan	20%	North America	20%
Africa	12%	Four Tigers	14%
North America	9%	Africa	9%

1975		1980	
Four Tigers	59%	Four Tigers	47%
Other Asia	23%	North America	30%
North America	6%	Other Asia	15%
Japan	3%		

Major commodities in this section are "Electrical Machinery, Apparatus and Appliances" and "Machinery, other than Electric" in 1981, particularly the former occupied 87 percent of export value in this section.

The markets of "Electrical Machinery" have remarkably changed in 1970s shifting to North America and Four Tigers as shown below.

1970		1981	
Other Asia	48%	Four Tigers	49%
Middle East	26%	North America	34%
Four Tigers	14%	Other Asia	11%
North America	6%		

Table 4.10 EXPORTS OF COMMODITY GROUPS FROM THAILAND
(BY TWO DIGITS CLASSIFICATION OF ISTC)

		in 1965	in 1970	in 1975	in 1980	in 1981
Section 5	Chemicals					
51	Chemical Elements and Compounds	141	287	2,357	7,246	16,191
52	Mineral Tar and Crude Chemicals from Coal, Petroleum and Natural Gas	-	-	-	-	-
53	Dying, Tanning and Colouring Materials	59	89	1,407	2,268	2,675
54	Medical and Pharmaceutical Products	208	683	5,725	16,363	13,221
55	Essential Oils and Perfume Materials	438	198	987	4,834	8,148
56	Fertilizers, Manufactured	2	12	-	447	69
57	Explosives and Pyrotechnis Products	-	14	-	-	3
58	Plastic Materials	3	63	3,093	11,726	13,328
59	Chemical Materials and Products, N.E.S.	171	1,266	1,129	5,143	2,539
Section 6	Manufactured Goods classified chiefly by Materials					
61	Lether, Leather Manufactures, N.E.S. and Dressed Fur Skins	217	510	2,490	11,452	10,206
62	Rubber Manufactures, N.E.S.	131	414	3,900	34,319	32,598
63	Wood and Coke Manufactures	256	1,844	22,734	66,599	62,801
64	Paper, Paperboard and Manufactured Therof	412	327	4,385	10,996	8,651
65	Textile Yarn, Fabrics, Made-up Articles and Related Products	1,994	8,697	81,065	329,904	344,932
66	Non-metaric Mineral Manufactures, N.E.S.	5,778	11,944	67,394	188,382	239,774
67	Iron and Steel	324	1,922	5,371	49,822	30,565
68	Non-ferrous Metals	19,273	78,073	114,611	667,255	437,053
69	Manufactures of Metal, N.E.S.	1,540	1,480	11,016	54,255	48,483
Section 7	Machinery and Transport Equipment					
71	Machinery other than Electric	732	1,667	6,728	30,054	31,599
72	Electrical Machinery, Apparatus and Appliance	685	699	24,061	335,051	320,572
73	Transport Equipment	1,510	1,906	5,532	23,506	16,627
Section 8	Miscellaneous Manufactured Articles					
81	Sanitary, Plumbing, Heating and Lighting Fixtures and Fittings	8	61	867	3,045	5,280
82	Furniture	29	22	3,147	29,395	32,871
83	Travel Goods, Handbags and Similar Articles	29	39	645	13,913	16,454
84	Clothing	807	933	53,554	266,592	343,829
85	Footwear	16	11	741	17,378	43,591
86	Professional, Scientific and Controlling Instruments	62	1,167	5,092	22,348	30,843
89	Miscellaneous Manufactured Articles, N.E.S.	1,019	2,321	18,512	92,098	101,104

The markets of "Non-electric Machinery" are Asian and African Countries as follows:

1970		1981	
Other Asia	42%	Other Asia	37%
Four Tigers	19%	Four Tigers	27%
North America	15%	Africa	14%
Japan	7%	Middle East	9%
Europe	7%		

The markets of "Transport Equipment" are Asian Countries such as Four Tigers and Other Asia as follows:

1970		1981	
North America	29%	Four Tigers	41%
Other Asia	29%	Other Asia	38%
Africa	17%	Europe	6%
Four Tigers	10%	North America	6%
Oceania	6%		

Table 4.11 INCREASE IN SHARE AND GROWTH IN VALUE OF MAJOR COMMODITY SECTION

ISTC Code	Commodity Section	Share in 1970	Share in 1980	Annual Growth Rate
8	Miscellaneous Manufactured Articles	0.6%	8.2%	55.2
7	Machinery and Transport Equopment	0.6%	5.2%	50.0
6	Manufactured Goods	14.8%	17.3%	24.9
0	Food & Live Animals	47.6%	52.3%	24.2

3) Markets of Manufactured Goods classified chiefly by Material

The markets of commodities in this section as a whole are developed countries. The increase of market share of Europe is remarkable as follows:

1965		1970		1981	
North America	48%	North America	52%	Europe	37%
Central & South America	21%	Europe	25%	North America	21%
Other Asia	13%	Other Asia	10%	Four Tigers	13%
Europe	9%	Japan	6%	Japan	13%

In this section, major commody groups are "Non-ferrous Metals" (36 percent of export value in this section), "Textile Yarn, Fabrics, Made-up Articles and Related Products" (28 percent) and "Non-metallic Mineral Manufactures, N.E.S.," (20 percent).

The markets of "Non-ferrous Metal", the most of which are tin metal, are three areas of Europe, North America and Japan as follows:

1970		1981	
North America	68%	Europe	53%
Europe	28%	North America	32%
Japan	4%	Japan	15%

The markets of "Textile, Yarn, Fabrics, Made-up Articles and Related Products" has spreaded into various areas. Particularly the growth of export to Europe and Middle East should be notable.

1970		1981	
Four Tigers	28%	Europe	25%
Other Asia	24%	Four Tigers	21%
Japan	23%	North America	11%
Europe	10%	Japan	11%
Oceania	7%	Middle East	9%

4.8 EXPORT STRUCTURE OF MANUFACTURED GOODS FROM FOUR TIGERS AND THEIR MARKETS

Export structure of Four Tigers had better been analysed, because some commodities, labour intensive ones in particular, can be replaced to Thailand and some commodities will compete with Thailand. Exports of manufactured commodities have gradually grown. In the late 1960s "Machinery and Transport Equipment" and "Miscellaneous Manufactured Articles" were dominant. In early 1970s "Machinery and Transport Equipment" had still a dominant share among four sections, however, the export of "Chemicals" and "Manufactured Goods Classified Chiefly by Material" grew rapidly. In the late 1970s the growth of "Chemicals" was so remarkable that it occupied 40.9 percent of manufactured export in 1980. (See Table 4.12)

Value of export from Four Tigers in two digits classification in 1970 and in 1980 are then examined. Annual growth of manufactured export as a whole was 29.7 percent during 1970s. In these period the growth rate of export value was the largest as of 36.5 percent per annum followed by "Chemicals", "Manufactured Goods Classified Chiefly by Material" and "Miscellaneous Manufactured Articles" accordingly.

1) Exports of Machinery and Transport Equipment

Although this section as a whole, imports exceeded exports, a subsector of "Electric Machinery" recorded trade surplus in 1980.

Its markets are as follows:

In 1970		In 1980	
Other Asia	49%	North America	31%
North America	22%	Other Asia	30%
Four Tigers	9%	Europe	10%
Japan	6%	Four Tigers	6%
Africa	5%	Japan	5%

Thai export will have to compete with Four Tigers in Asian Market, North America and Europe. Among various commodities, labour intensive ones will be favourable for Thailand.

Table 4.12 MANUFACTURED EXPORT FROM FOUR TIGERS

	Value of Export (in thousand dollars)				Annual Growth Rate			
	1965	1970	1975	1980	1965 -1970	1970 -1975	1975 -1980	1980 -1985
5. Chemicals	109,365	187,630	600,914	3,339,302	11.4%	26.2%	40.9%	33.4%
6. Majufactured Goods Classified Chiefly by Material 7.	583,894	1,280,539	4,277,450	15,667,150	17.0%	27.3%	29.6%	28.5%
7. Machinery and Transport Equipment	200,760	755,364	3,833,470	16,914,118	30.3%	38.4%	34.6%	36.5%
8. Miscellaneous Manufactured Articles	705,515	2,283,848	7,606,198	24,787,731	26.5%	27.2%	26.7%	26.9%
TOTAL	1,599,534	4,507,381	16,318,032	60,708,301	23.0%	29.3%	30.1%	29.7%

Table 4.13 IMPORTS AND EXPORTS OF MACHINERY AND TRANSPORT EQUIPMENT

	1970			1980		
	Import	Export	Balance	Import	Export	Balance
Machinery, Non-electric	960,779	157,284	803,495	7,209,746	2,863,399	△4,346,347
Electrical Machinery	698,661	513,582	185,079	7,880,544	8,228,125	347,581
Transport	506,297	84,498	421,799	4,083,970	3,439,885	△ 644,085

2) Exports of Chemicals

Though export of chemicals from Four Tigers has grown enormously, the export exceeded for the first time in 1980. Subsectors of "Chemical From Tar, Petroleum, etc" and "Fertilizers, Pyrotech Products" got surplus in trade value. (See Table 4.14)

The markets of "Chemical From Tar and Petroleum" were as follows in 1970 and 1980.

1970		1980	
Oceania	87%	Japan	64%
Four Tigers	8%	Oceania	14%
Japan	4%	Other Asia	7%
		Four Tigers	6%
		Europe	5%

Major exporting country is Singapore and the markets are Asia & Pacific Areas. Thai export will be possible in the areas of Natural Gas Based chemicals and organic chemicals based on agriculture. The markets of "Fertilizers, Pyrotech Products" are Other Asia and Middle East as follows.

1970		1980	
Other Asia	89%	Other Asia	68%
Middle East	8%	Middle East	14%
Four Tigers	2%	Four Tigers	7%
		China Mainland	5%

Table 4.14 IMPORTS AND EXPORTS OF CHEMICALS FOR FOUR TIGERS

	1970			1980		
	Imports	Exports	Balance	Imports	Exports	Balance
Chemical Elements and Compound	172,942	24,694	△ 148,248	2,820,576	600,625	△2,219,951
Chem. From Tar, Petroleum, etc.	1,050	3,474	2,224	121,820	733,702	611,882
Dying, Tanning and Colour Materials	69,203	18,748	△ 50,455	587,802	198,350	△ 389,452
Phermaceuticals	102,419	60,408	△ 42,011	486,330	338,817	△ 150,513
Perfume, Toilet Goods	52,082	25,993	△ 28,089	366,072	179,541	△ 186,531
Fertilizers, Manufactured	21,106	15,490	△ 5,616	195,193	448,001	252,808
Explosives, Pyrotech Products	8,526	7,483	△ 1,043	60,724	59,575	△ 1,149
Plastic Materials, etc.	150,790	19,345	△ 131,445	1,388,036	560,246	△827,790
Chemical Materials, NES.	105,154	11,995	△ 93,159	659,169	220,442	△ 438,727

3) Exports of "Manufactured Goods Classified Chiefly by Material"

The export of commodities in this section exceeded the import for the first time in 1980, too. In 1970, only a subsector of "Wood & Coke" recorded surplus in trade value, however "Textile Yarn, Fabrics", "Manufactures of Metal,NES" and "Rubber Manufactures" moved to surplus in 1980. (See Table 4.15)

(Market of Wood and Coke)

1970		1980	
North America	69%	North America	31%
Japan	13%	Europe	22%
Europe	6%	Middle East	18%
Oceania	4%	Africa	9%
Four Tigers	3%	Japan	8%
		Four Tigers	4%

(Markets of Textile Yarn and Fabrics)

1970		1980	
Four Tigers	21%	Four Tigers	22%
Europe	19%	Other Asia	17%
Other Asia	17%	Europe	13%
North America	14%	Japan	12%
Africa	12%	Africa	8%
Oceania	8%	North America	8%
Japan	6%	Middle East	7%

(Markets of Manufactures of Metal, NES)

1970		1980	
North America	34%	North America	35%
Other Asia	25%	Europe	17%
Europe	13%	Middle East	13%
Africa	7%	Other Asia	13%
Four Tigers	6%	Africa	7%
Japan	5%	Four Tigers	4%

(Markets of Rubber Manufactures)

1970		1980	
Other Asia	34%	North America	26%
North America	21%	Middle East	26%
Middle East	17%	Europe	17%
Africa	8%	Other Asia	8%
Four Tigers	6%	Africa	6%

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Table 4.15 IMPORTS AND EXPORTS OF "MANUFACTURED GOODS CLASSIFIED CHIEFLY BY MATERIAL" FOR FOUR TIGERS

	1970			1980		
	Imports	Exports	Balance	Imports	Exports	Balance
Leather, Leather MFR, and Dressed Fur Skins	22,745	9,452	△ 13,293	536,467	187,858	△348,609
Rubber Manufactures	24,350	16,902	△ 7,448	222,741	756,031	533,290
Wood & Coke	22,027	213,844	191,817	309,017	1,482,792	1,173,775
Paper & Paperboard	128,025	18,804	△ 110,221	833,860	397,746	△436,114
Textile Yarn, Fabrics	962,061	610,916	△ 351,145	4,505,801	6,102,611	1,596,810
Non-metaric Mineral MFR	252,991	175,521	△ 77,470	2,055,817	1,520,546	△535,271
Iron & Steel	371,410	87,420	△ 283,990	3,667,141	2,249,000	△ 1,418,141
Non-ferrous Metals	119,110	27,809	△ 91,301	1,545,181	659,106	△886,075
Manufactures of Metal, NES	153,421	119,867	△ 33,555	1,299,367	2,311,462	1,012,095

4) Exports of "Miscellaneous Manufactured Articles"

Commodities in this section are mainly the traditional export from Four Tigers. Export value of this section as a whole have exceeded the value of import consistently. The trade balance has been surplus with almost all subsectors. Even a subsector of "Instruments Cameras and Watches" moved to surplus in 1980, though it was deficit in 1970. (See Table 4.16)

As the most of commodities in this section are labour intensive manufactures, potential markets for Thai export will be found in this section. The major markets are developed countries and in future Four Tigers will be major importers of these commodities.

(Markets of Footwear)

1970		1980	
North America	58.5%	North America	41.3%
Europe	21.5%	Europe	35.5%
Japan	6.4%	Japan	7.1%
Middle East	3.6%	Middle East	5.6%

(Markets of Miscellaneous Manufactured Articles)

1970		1980	
North America	63.2%	North America	40.9%
Europe	18.3%	Europe	24.1%
Japan	3.8%	Japan	6.8%
Four Tigers	3.6%	Four Tigers	5.2%
Other Asia	3.4%	Other Asia	5.1%
Oceania	3.0%	Middle East	4.9%

(Markets of Clothing)

1970		1980	
North America	53.0%	North America	41.3%
Europe	28.2%	Europe	35.5%
Japan	7.1%	Japan	7.1%
Africa	3.3%	Middle East	5.6%

(Markets of Travel Goods, Handbags, etc.)

1970		1980	
North America	52.1%	North America	44.8%
Europe	14.0%	Europe	31.0%
Oceania	7.1%	Middle East	7.1%
Africa	6.4%	Oceania	4.0%
Japan	5.1%	Africa	3.5%

(Markets of Furniture)

1970		1980	
North America	60.3%	North America	50.3%
Other Asia	12.9%	Japan	18.5%
Oceania	7.9%	Europe	10.2%
Europe	5.4%	Middle East	6.4%
Japan	5.2%	Oceania	6.0%

(Markets of Sanitary, Heating, Lighting Equipment)

1970		1980	
North America	42.9%	North America	31.3%
Europe	17.2%	Europe	15.6%
Four Tigers	8.0%	Middle East	14.0%
Africa	6.0%	Other Asia	11.6%
		Africa	10.3%

(Markets of Instruments, Cameras, Watches)

1970		1980	
Four Tigers	27.0%	Europe	28.0%
North America	15.3%	North America	25.2%
Other Asia	13.0%	Four Tigers	13.4%
Europe	12.7%	Other Asia	8.6%
Oceania	8.1%	Middle East	7.3%
C.S. America	7.8%	C.S. America	5.5%
Japan	7.0%	Japan	5.3%

Table 4.16 TRADE BALANCE OF "MISCELLANEOUS MANUFACTURED ARTICLES" FOR FOUR TIGERS

	1970			1980		
	Import	Export	Balance	Import	Export	Balance
Sanitary, Heating Lighting Equipments	17,179	41,096	23,917	113,405	246,130	132,725
Furniture	10,095	21,850	11,755	143,797	489,937	346,140
Travel Goods Handbags, etc.	9,392	42,359	32,967	137,021	1,261,834	1,124,813
Clothing	70,101	1,156,318	1,086,217	858,719	10,752,162	9,893,443
Footwear	11,547	100,180	88,633	176,284	2,491,313	2,315,023
Instruments, Cameras Watches	260,615	86,848	△ 173,767	2,951,246	3,020,635	69,389
Miscellaneous Manufactures Articles	243,058	835,198	592,140	2,235,186	6,525,721	4,290,535