Did FDI Replace the Role of the Government, or the Government Supported the FDI in the Process of Industrial Development?
: A Case Study of the Thai Textile Industry

by

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ABSTRACT

This thesis discusses whether FDI replaced or the role of the Thai government or the government supported FDI, for the Thai textile industry, to maintain international competitiveness in a long-run. This thesis concludes that the Thai government supported the role of FDI.

In the 1960-70s, the FDI played an important role on industrial development; MNCs, based on their advanced technologies and industrial linkages, provided advanced technologies and input materials constantly to local large-sized firms. Local large-sized firms actively involved in joint venture with foreign firms or collected stake-holders, and developed their technologies and expanded production. The government supported both types of firm by providing priviledges. However, in the 1980s to the present, with expansion of the clothing sector, the textile industry had to further expand high-quality goods and diversify to high-value added products. The role of the FDI reduced, because it was not related to technological development of the entire textile industry and did not create industrial linkages to the clothing industry to remain competitive over a lon run. Consequently, it is expected that the Thai textile industry will lose competitiveness in the future.

This thesis stresses that the Thai government should have played a key role on developing the entire textile industry and creating linkage to clothing industry.

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Thesis: Did FDI replace the role of the government, or the government supported the FDI in the process of Industrial Development? : A Case Study of the Thai Textile Industry

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1. Introduction

1.1 Overview

Did foreign direct investment (FDI) replace the role of the government? The Thai government, particularly the Board of Investment (BOI) regards FDI as a critical factor for industrial and technological development.

> The basic attitude of the Thai Government toward foreign participation in the Thai economy in general and foreign investment is strongly positive. The government believes foreign investment is good for Thailand and devotes a great deal of time and energy trying to attract it, especially into those areas considered to be of high priority, defined in terms of the country's national development objectives....The Government recognizes the impermanent nature of many of our country's comparative advantages and realizes that increased productivity is the key to continuing international competitiveness... we face increasing competition from countries with even lower labor costs. We cannot afford to stand still. We must participate in this era of rapid technological change and to do that we must cooperate with foreign business organizations in order to accelerate the transfer of technology into our country (Panupong,1984:7-10).

In developing its textile[1] industry, Thailand has obtained extensive FDI, especially from Japan[2]. However, to sustain technological development and international competitiveness over an extended period of time, has FDI, contrary to other Asian countries such as South Korea where the government has taken a key position

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[1] In this thesis, textile industry is defined as industry producing staple fiber, yarn, and fabrics.

[2] See Appendix 4

in fostering industrial development, replaced the role of the government in Thailand? This thesis analyzes the effect the Thai government and FDI had on technological development and international competitiveness in the Thai textile industry.

The textile industry has played an important role in the industrial development of Thailand. Development of the industry started at the beginning of the 1960s when there were few industries in Thailand. Since then, the production and export share of the textile industry has been large in total manufacturing output of Thailand. FDI, especially by Japanese multinational companies (MNCs), have held the largest share of Thai textile production and exports (over 50% of fabrics in 1994), and have therefore played an important role in its development.

Table 1-1 shows the share held by fabrics and clothing products in Gross Domestic Products (GDP) in Thailand. The weaving and clothing industries have held the largest share of total manufacture (22.4% in 1992). Table 1-2 shows the export performance of the textile and clothing sectors in the 1990s. The clothing sector is the most important export earner. Considering the fact that the Thai balance of trade has been negative, the textile and the clothing industries have been the most important manufacturing exporters. Moreover, these two sectors are responsible for approximately one-third of total manufacturing employment (Table 1-3).

Table 1-1 Share Held by the Textile and Clothing Sectors in Thai GDP, 1987-92

(Mil.B, %)

	1987	1988	1989	1990	1991	1992
Agricultural products	120,750	157,783	175,229	164,547	191,392	199,469
Manufactured products	315,291	403,034	497,053	595,873	708,868	793,449 (100.0)
- Weaving	38,570	45,569	55,024	64,014	78,547	95,301 (12.0)
- Clothing	35,840	42,340	48,740	61,324	78,172	82,522 (10.4)
- Food	32,592	46,351	59,942	57,657	60,678	64,874 (8.2)
- Beverage	23,592	27,844	34,467	38,369	46,835	49,084 (6.2)
- Petroleum	22,032	26,921	25,491	25,274	42,221	46,221 (5.8)

Source: Japanese Chamber of Commerce

Table 1-2 Export Performance of Textile & Clothing Sectors in the 1990s

(Mil.B)

	1990	1991	1992	1993
Clothing	65,804	86,622	88,108	91,548
Computer, parts	38,695	46,441	57,684	61,500
Jewelry	34,892	35,963	36,653	43,100
Rice	27,770	30,516	36,213	31,000
Textile products	22,680	27,278	29,695	31,519
Total Exports	589,813	725,630	824,644	935,862
Balance of Trade	-254,635	-233,201	-208,600	-230,734

Source: Japanese Chamber of Commerce, Thai Textile Manufacturing Association.

Table 1-3 Share & Number of Workers Employed in the Textile Industry, 1989-93

(1,000 persons, %)

	1989	1990	1991	1992	1993
A:Total Employment	30,612.0	30,843.0	32,028.0	32,384.0	32,153.0
B:Employment in manufacturing	2,770.0	3,133. 0	3,216.0	3,600.0	3,961.0
C:Employment in Textile & Clothing Industries	880.5	975.1	1,037.9	1,070.6	1,100.6
C/B	31.8	31.1	32.3	29.7	27.8

Source: Textile Intelligence Unit, Textile Industry Division, Dept. of Industrial Promotion

However, the Thai textile industry has recently faced increases in its wage levels, and has begun to lose market share to other lower-wage countries, such as China and Indonesia. This problem had prompted the industry to think about how to maintain its industrial competitiveness over the long-run as its wage levels become higher than those of other developing countries.

This thesis discusses what role FDI and the government have played in promoting technological development to maintain Thai long-term competitiveness in its textile industry. The analysis focuses primarily on the weaving industry, which has held a large production share of Thai GDP since the 1970s.

1.2 Methodology

Analysis is based on the field research I conducted during the summer of 1995. Information is shown as data and interviews.

However, various statistical data describing the 1960s and 1970s may contain inaccuracies, because some businessmen changed their figures to avoid business and taxes, and because some businesses, such as border ones, were not properly registered. Especially, there is no official data concerning sales, production and capital accumulation for each Thai company. Given lack of refeable data, I used the data and the result of field research supplied by Thai textile experts: Suehiro, A., Yamazawa, I. & Tanbunlertchai, S., Ajanant, J., Buddhikarant, and Textile group of Japanese Chamber of Commerce. As for the 1980s, data from surveys conducted by Japan International Cooperative Agency (JICA) in 1989 is helpful.

To supplement this shortage of data, and for more detailed analysis, I interviewed executives listed in Appendix 3.

1.3 Outline

In the third chapter, I focus on Thai industrial development from the 1960s to the 1970s, and analyze why the Thai textile industry developed during this period. The analysis starts with firm level competitiveness: the development of production and sales technologies in MNCs and local firms. And I look at the competitiveness of the entire textile industry. The forth chapter focuses on industrial competitiveness in the 1980s and 1990s. The fifth chapter compares both periods and discusses the effects of FDI on technology development, the role of the Thai government, and whether FDI has replaced the role of the government.

2. Theoretical Background

2.1 Process of industrial development

This thesis classifies industrial competitiveness in developing countries into the two categories of long-term and short-term competitiveness. During the initial period of industrial development, developing countries are highly cost competitive, primarily because of their low-wage levels. Generally such countries have many unskilled, low-priced laborers, and their industries try to hold onto their competitiveness by relying on labor intensive technologies to produce low-priced goods. In this thesis, this factor is referred to as "short-term competitiveness."

As these industries develop, they need to rethink their strategies to remain competitive over the long run. To acquire this "long-term competitiveness," these industries need to consider modes of "differentiation" as well as those of low-cost competitiveness. For Porter[3], the strength of "differentiation" competitiveness differs depending on whether production is performed at comparable cost but in unique ways that greatly differentiate the product from that of its competitors. This concept includes high quality and high value-added products and services, such as those built into a quick response system. To acquire long-term competitiveness, industry should develop

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[3] Porter, 1992

technology at both firm and industrial levels.

2.2 Long-term competitiveness: At the level of the firm

At the level of the firm, to remain competitive over the long-run, companies should improve cost and non-cost competitiveness. To improve cost competitiveness further, firms may need production processes that are innovative and that introduce new machinery. Firms also need to improve non-cost competitiveness by upgrading such factors as quality control and sales technology. Porter[4] classifies these firms' activities, and suggests that conditions at each stage influence both competitiveness of "low relative cost"[5] and "differentiation". His classification of a firm's activities is summarized as follows: production activities are classified as upstream activities, downstream activities and support activities. Upstream activities characterize physical creation of the product, and downstream activities refer to sales, marketing and services after sale. These two activities are production processes which start with the processing of material sales. Support activities strongly influence up- and downstream activities, and also influence each other. "Procurement" is obtaining inputs, such as raw materials, intermediate goods and

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[4] Porter, 1992

[5] Porter classifies firms' competitive advantage into "low relative cost," which in my terms is referred to as cost competitiveness, and "differentiation."

machinery; "technology development" includes designing products and process innovation. "Human resource management" is recruiting and training workers, and creation and improvement of the organizational structure of a firm. "Firm infrastructure" includes general management, finance, strategic planning and other activities which determine the managerial ability of the firm. To maintain cost and differentiation competitiveness in the long run, it is necessary to recognize the importance of "support activities" rather than simply those of low-cost labor. These activities strongly influence both cost and differentiation competitiveness; if a capable manager innovates upon a production process, it may reduce both production costs and create new products.

When these concepts are applied to industries in developing countries, another consideration is necessary. Since these industries initially obtain competitiveness based only on the low levels of wages, and develop by obtaining more sophisticated technologies through transfers from developed countries, the processes of technological development in developing countries is different from those in developed countries. For example, it is often remarked that competitiveness in the Thai textile industry is based on the low cost of its labor. Other less developed countries which have lower labor costs, such as China, have tended to catch up and match the competitiveness of Thailand. Based on only cost competitiveness, the Thai textile industry will be overwhelmed by China in the near future. As the Thai economy develops, its currency is expected to appreciate and its wage levels are

similarly, expected to rise; hence, Thai industries will gradually lose competitiveness based only on low wages.

Thus, "technology development" should be modified. The MIT Commission on Industrial Productivity (1989) cites up-to-date machinery and increased physical productivity as two of the key factors which are necessary to maintain competitiveness when low-wage countries threaten higher-wage ones. In addition, production skills are also extremely important to the production of high quality goods[6]. Even if firms purchase highly efficient machinery, it is meaningless for workers who have not been trained how to utilize them. For example, although the Japanese level of wages is far higher than those in developing countries, the skill of Japanese weavers to produce high quality fabrics in small-sized firms remains internationally competitive. Consequently, Japanese textile goods, because of their quality, have a higher level of competitiveness than those of South Korea which imposed cost priorities[7] particularly in the 1960s.

Therefore, in the process of technological development, firms adopt strategies that are either skill or capital intensive. Capital intensive firms are defined as those which produce based on economies of scale. This type includes firms which produce large amounts of standardized products. Skill-intensive firms are defined as those that focus on various kinds of high value-added goods.

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6 Lall, 1992

7 In the recent past, because of the extreme appreciation of the yen, Japanese weavers began to lose their competitiveness.

However, most firms in developing countries cannot easily follow this process. Instead, these firms often have difficulty of obtaining advanced skills and the machinery necessary to produce high quality or high value-added goods. The problem stems from structural differences between developing and developed countries; too often "support activities" in developing countries have not yet been sufficiently developed to be competitive at the international level. Firms in developing countries generally lack financial resources enough to obtain up-to-date machines and human resources which have advanced knowledge about production skills. Adding to production technology, they also need sales technology. It is often believed that firms in developing countries deliver goods late or do not have adequate international sales routes. Therefore, to analyze technological development in developing countries, it is important to think about how firms catch up with the levels of advanced technologies in industrialized countries.

2.3 Long-term competitiveness: Industrial structure

Added to activities at the firm's level, industrial structure also strongly influences "long-term competitiveness." Industrial structure includes the linkage of each sector, such as fiber, spinning, weaving, dyeing and clothing manufacturing, and inter-firm linkages, such as subcontracting systems. For instance, whether the weaving industry produces high-value-added or low-priced goods largely depends on what kinds of goods clothing

companies produce. Whether a firm can obtain technologically advanced machinery often depends on what kinds of machines the domestic machinery industry produces. Such factors result in large differences in cost competitiveness because how quickly goods can be produced depends on whether a firm has to import machines or can obtain them from domestic producers. Thus, domestic industrial structure is also an extremely important determinant of long-term competitiveness. The MIT Commission on Industrial Productivity (1989) also points to industrial structure as one of the factors which are necessary for a country to remain competitive when low-wage countries threaten them. According to the MIT research, Italian clothing firms succeeded in producing high value-added and specialized products by developing a flexible subcontracting system. Similarly but differently, in the Japanese textile industry, there are many small weaving factories which form a group with a head, called *sanmoto.* Large-sized textile fiber companies commission orders through their *sanmoto*, to small-sized weaving firms to produce the required fabrics, and thus the staple fiber and fabric sectors are linked. There are also industrial linkages between the weaving and clothing sectors, in which Japanese trading companies, acting as middlemen, take responsibility for sales. Based on this system, textile companies can effect a flexible production system, which enables them to produce various kinds of goods quickly in response to changing market demands.

The final stage is rationalization. As the economy develops, the wage level may rise and currency may appreciate; consequently,

an industry may lose its cost competitiveness. To survive in the international market, the industry may have to be restructured. Since the Japanese yen increased rapidly in the 1990s, it is often remarked that the Japanese textile industry needs again to adjust industrially.

2.4 Has FDI replaced the role of the government in Thailand?

Figure 2-1 summarizes the previous discussions concerning the industrial competitiveness and technology of developing countries. I classify factors which are necessary for long-term competitiveness, and firm-level and industrial level competitiveness, all of which affect each other.

Based on Amsden's article[8], the role of the state in the process of industrial development in developing countries can be viewed as twofold: "getting the price wrong" to initialize industries, such as import tariffs and export subsidies, and providing "Beta technology", such as management systems, labor relations, shopfloor practices, subcontractual arrangements, arrangement of infrastructure and public policies, with firms so that firms can maintain industrial development over a prolonged period of time[9]. This role of the state can also be classified according to the concepts of "short-term competitiveness" and

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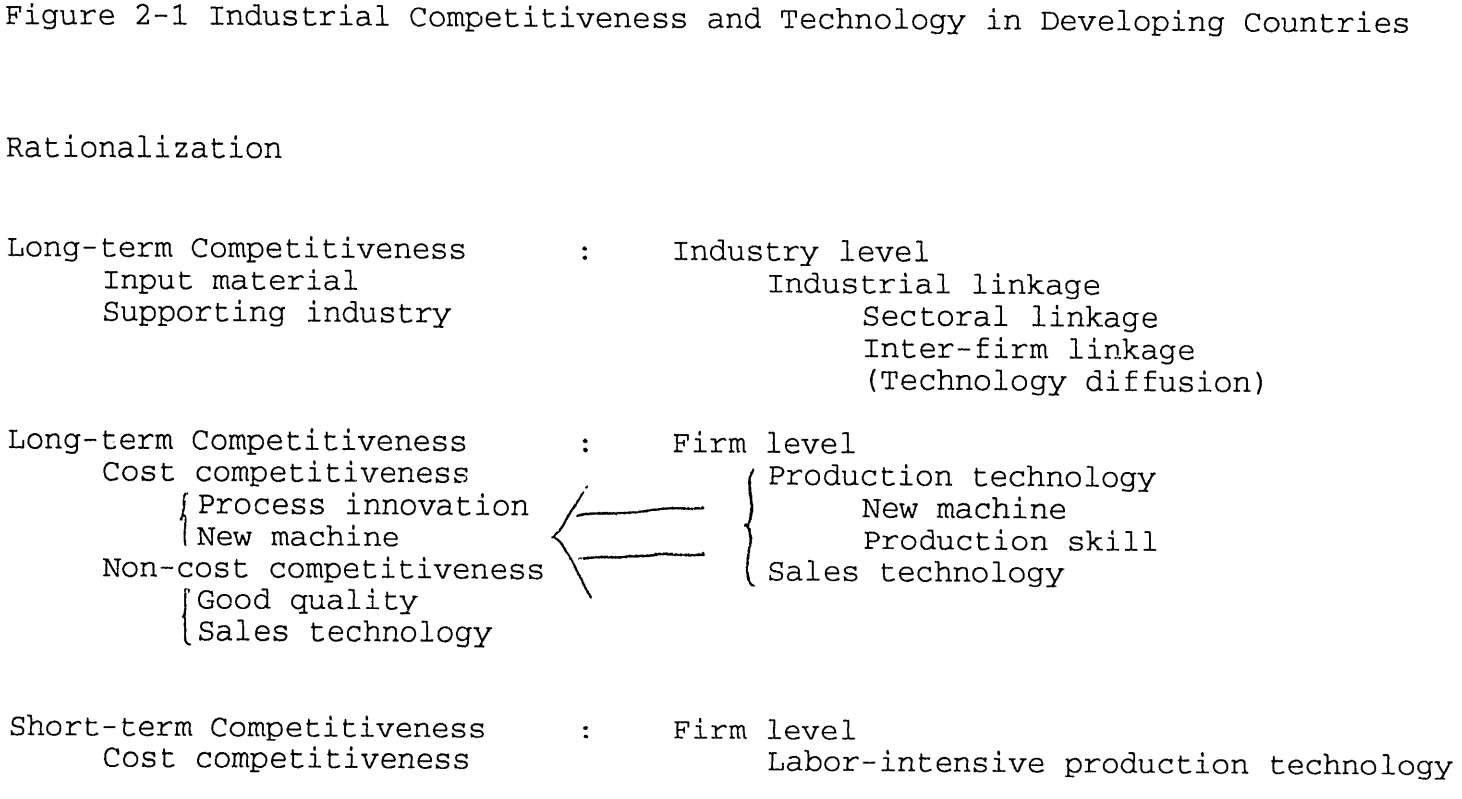
[8] Amsden, 1992

[9] This thesis does not analyze the role of the government on social infrastructure, such as education, and provision of electoricity.

Figure 2-1 Industrial Competitiveness and Technology in Developing Countries



"long-term competitiveness." When industry obtains short-term competitiveness, based on low labor costs, government is expected to manipulate market prices to protect and support its domestic industries. The government provides high import tariffs, export subsidies, and tax exemptions to encourage potentially competitive industries to invest heavily until the domestic industries acquire a level of technological expertise sufficient to compete with other advanced competitors in the international marketplace. I analyze whether the Thai textile industry successfully competed against imported products only because FDI brought advanced technology or if the government spurred technological development.

When industry develops and needs to obtain long-term competitiveness, the role of the government to provide "Beta technology" is extremely important. In this thesis, I use the framework shown in Figure 2-1, to discuss firm-level and industrial structure level competitiveness. In firm-level competitiveness, I define "production technology" and "sales technology" as the technologies which firms need to obtain long-term competitiveness.[10] In firm-level competitiveness, I analyze whether the Thai government has helped its textile industry obtain "production technology", and "sales technology" so as to promote long-term competitiveness, or whether FDI has replaced this role of the government.

As for industrial structure, I use two perspectives to analyze

[10]This is based on the discussion of the previous section.

the roles of FDI and the government. First, I focus on the role of the government and of FDI in promoting domestic industrial linkage in a world market in which competition has increasingly become severe for developing countries. At present, the Thai textile industry faces increase in wage level and, at the same time, is seriously affected by the protectionism effected by various developed countries. Moreover, a number of developing countries have been simultaneously trying to initialize industrialization through textiles. Under these circumstances, it is important for firms to procure input materials as early as possible, and to produce high quality goods. If there is no linkage between a weaving and a clothing firm, the weaving firm has to find its own export routes even though the clothing firms may be importing the same kind of woven product. This is disadvantageous for both firms, because such procedures may be more time-consuming and demand reliance on less stable relationships than those formed by domestic trade. Moreover, this linkage is also important for growth in GDP; if these two sectors are linked, growth in clothing production also means production expansion of weaving sector, which further increase GDP.

Second, my analysis also examines technological diffusion throughout the entire textile industry in Thailand. Although many articles discuss the role of foreign direct investment in technological development, most articles only analyze technology

transfers within a multinational firm.[11] However, to understand technological development in an industry, it is equally important to examine other local firms' activities. In this thesis, I would like to ascertain to what extent FDI has effected the diffusion of advanced technologies in Thailand.

[11]For example, Panupong (1984) and Tho (1992).

3. Development Process of the Thai Textile Industry: 1960s-70s

In this chapter, I discuss Thai industrial development in the 1960-70s. After reviewing activities of MNCs and government policies, the developmental processes effected during this period are described. In the next section, firm level competitiveness is analyzed including whether firms had competitiveness in "production technologies" and "sales technologies," as defined in chapter 2. In the third section, I focus on industrial structure: which type of firms succeeded in expanding their production. In the last section, by analyzing the capital accumulation and business abilities of certain firms, I discuss why some firms were able to achieve these levels of competitiveness, and why others were not.

3.1 Production performance in import substitution period: from the 1960s to the early 1970s

The Thai textile industry started to increase production in the middle of the 1960s, and completed a period of import substitution in the early 1970s. Figures 3-1 and 3-2 show the transition of cotton and man-made fabrics of import domestic demand (M/D) ratio and export domestic production (X/S) ratio. The M/D decline suggests that the Thai weaving industry substitutes imports for domestic demand. For both cotton and man-made fabrics, the M/D ratio started declining in the middle of the 1960s and was exceeded by an X/S ratio in the middle of the 1970s.

Figure 3-1 M/D & X/S ratio for Cotton fabrics

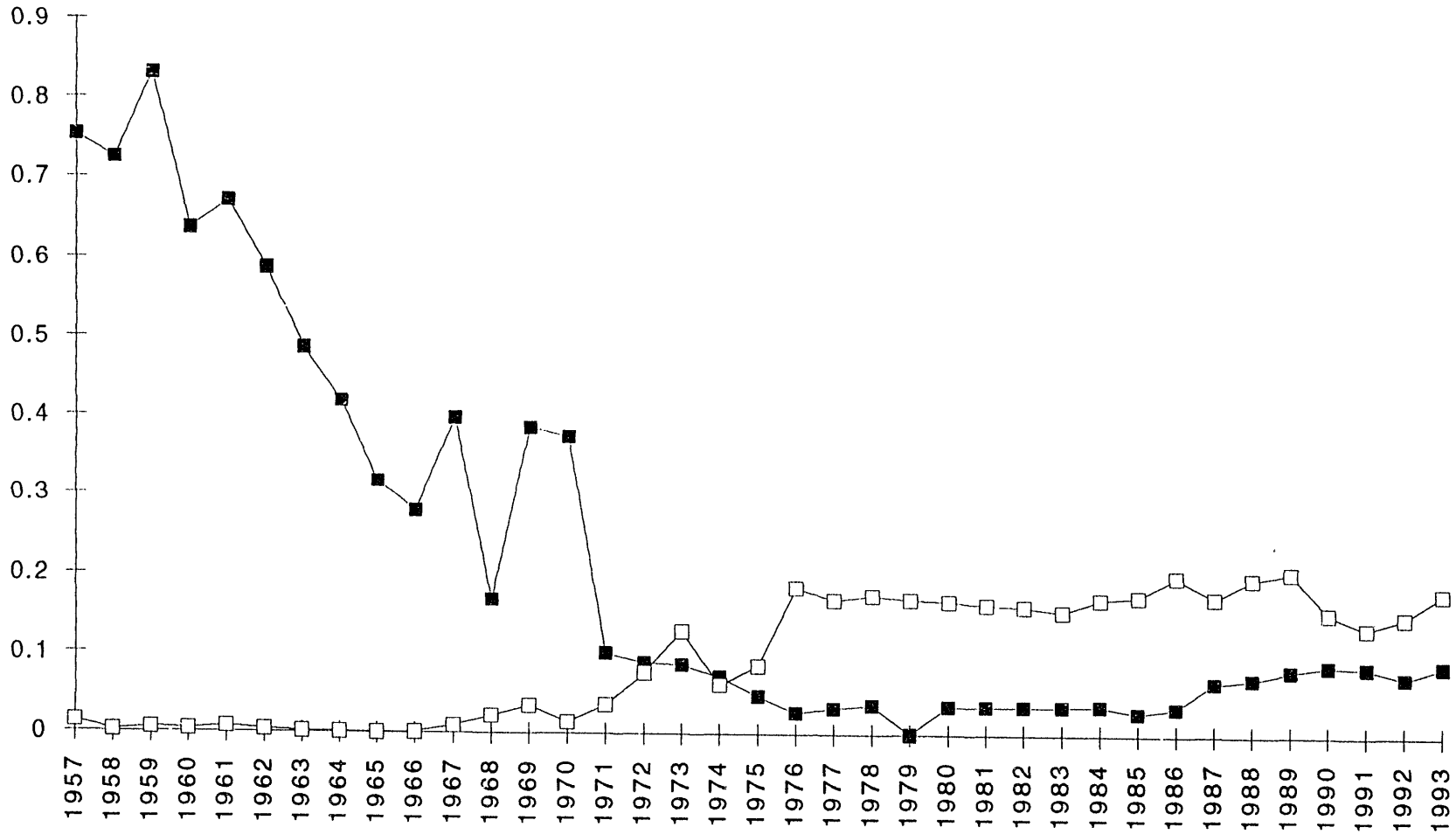
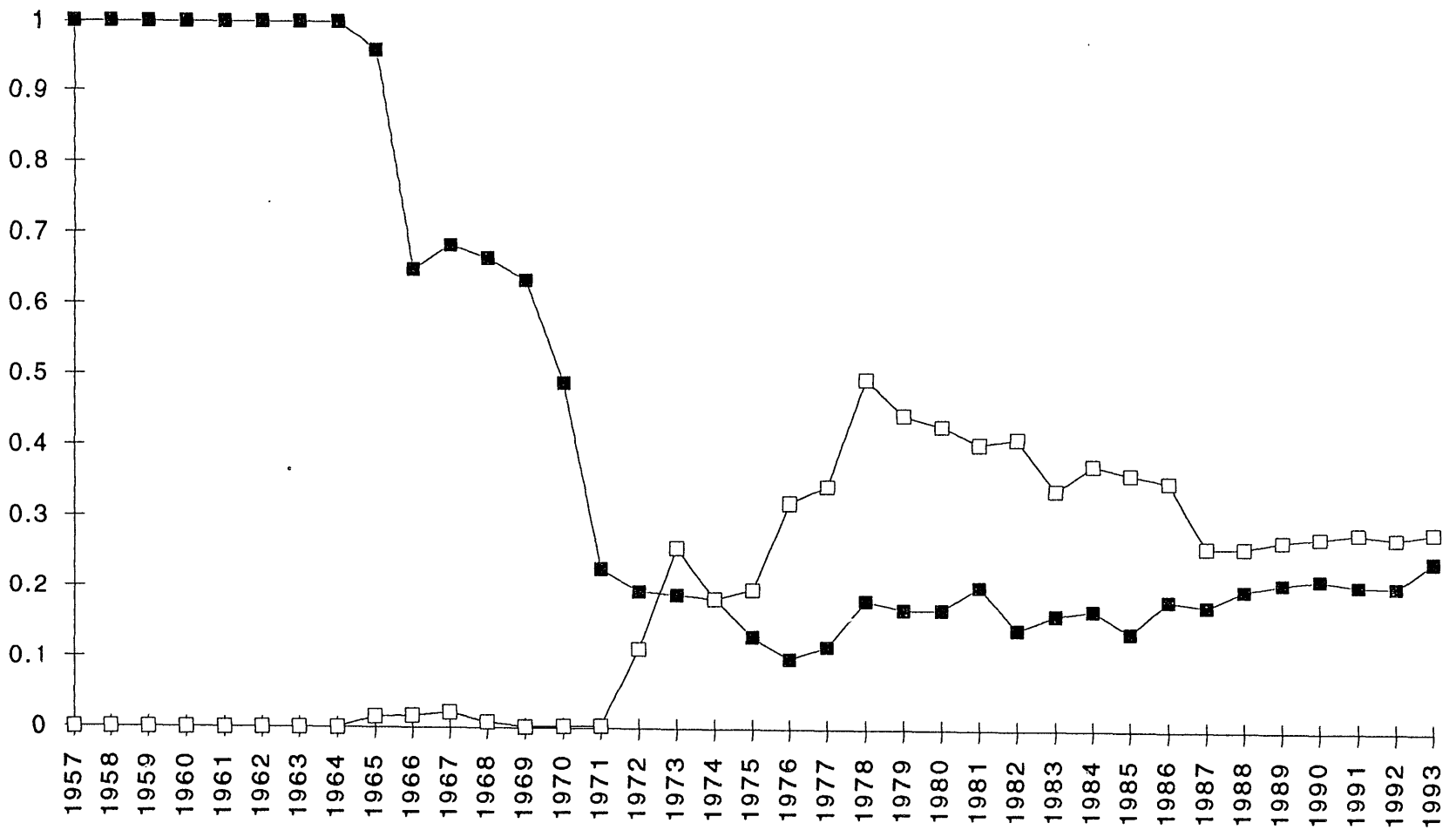


Figure 3-2 M/D & X/S ratio for Man-made fabrics



Until the 1950s, there were almost no textile industries in Thailand except for a few cotton firms. In the early 1960s, the Thai government started to promote the textile industry, and some local firms started their own businesses. However, man-made products were not produced; rather, most were imported (Figure 3-2). Table 3-1 shows the share of Thai import partners in total import of man-made fibrics in 1960. Japan, which had a strong level of international competitiveness at that time, held the largest share especially in man-made products.

Table 3-1 Importers Share of Man-made Fiber Fabrics, 1958-60
(Unit: 1000 sqy)

	1958	1959	1960
Import Total	29,987(100%)	32,927 (100%)	23,889 (100%)
-From Japan	21,404 (71%)	24,733 (75%)	18,091 (76%)
-From US	4,754 (16%)	5,427 (16%)	4,156 (17%)

Source: Kamiya 1965.

In the middle of the 1960s, a number of MNCs in developed countries, especially Japanese firms, shifted production facilities from their home countries to Thailand to take advantage of its low labor costs[12]. At that time, because Japanese companies were suffering from a serious recession and wage increases, they wanted to keep their high export share in the Thai textile market, and they assumed that the Thai government would restrict imports

[12] Textile MNCs established in the 1960-70s are listed in Appendix 4.

of these products so that domestic industries could develop. What triggered FDI was the Investment Promotion Act by BOI in 1962. Under the BOI Investment Promotion Act most MNCs were given a variety of incentives to invest in Thailand[13]. MNCs were interested in such privileges as exemption of business and income taxes, guaranteed remittance of profits in Thailand, and guaranteed working permission for their engineers[14]. In 1963, Japanese companies started production in Thailand[15].

FDI held many more shares of man-made products than cotton. As for man-made fiber production, three MNCs, Teijin Toray and Asia Fiber, held 100% share of production until the middle of the 1970s[16]. Table 3-2 shows the production share of FDI in 1972, when Thai cotton and man-made weavings almost substituted for imported products. FDI held many more shares of man-made yarns than cotton. Foreign firms also provided most of the filament weaving and polyester/rayon blended fabrics. The reason for FDI's larger share of man-made goods was that the MNCs initially avoided competition with local large-sized firms belonging to local business group which already produced cotton goods. Moreover, share of FDI in spun yarn was more than that of fabric production, since local weaving firms already started their production before the 1960s. Although FDI held a large share of man-made fiber and spinning

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13 See Appendix 1

14 See Appendix 1

15 See Suehiro, 1981, and Institute of Developing Economies, 1960.

16 Japanese Chamber of Commerce, 1972, and Suehiro, 1981.

production during this period, large share of weaving production was held by local firms.

Table 3-2 Share of FDI and Local Firms in 1972 (%)

Yarn	Cotton	P/C	Man-made yarn
FDI/JV	39.4	49.8	61.7
Business group	53.4	30.9	22.4
BOI promoted	80.2	100.0	94.6

Fabrics	Cotton	P/C	P/R	Spun Total	Filament
FDI/JV	14.3	38.1	49.7	23.0	90.2
Business group	11.2	37.8	24.7	18.8	0
BOI promoted	46.1	58.1	84.0	52.1	41.5

* P/C: Polyester cotton, P/R: Polyester rayon

Source: Japanese Chamber of Commerce, Board of Investment

The labor productivity of MNCs was higher than that of local firms. Table 3-3 shows the difference of productivity among Japanese, MNCs in Thailand and Thai local firms. At this point, foreign firms had more advanced production technologies than local firms and MNCs' production activities were far more efficient[17]. However, productivity of MNCs in Thailand was lower than that of

[17] Buddhikarant, 1973

the Japanese textile industry, and the Thai textile firms used more labor-intensive machines; the level of production technology in the Thai textile industry had not caught up with the level in advanced countries.

Table 3-3 Labor Productivity and Capital Output Ratio of Firms in the Early 1970s (1,000 Bahts)

	labor productivity	Y/K
FDI (MNCs stock share more than 50%)	87.27	0.79
Local firms (MNCs less than 50%)	56.24	0.57
Local firms (100% Thais)	54.25	0.65
Japanese weaving firms in Japan	159.53	

Y/K: capital output ratio
K = gross value of land + building + machinery, equipment & improvement plus other fixed assets.
Source: Buddhikarant, R., A Case Study on the Economic Contribution of Private Direct Foreign Investment in the Textile Industry, Master thesis, 1973.
MITI, Industrial Statistics, Japanese Long-term Statistics

3.2 Government policy

Adding to BOI promotion, the government policies during the 1960-70s are divided into protection of domestic market and promotion of export.

To protect its domestic market, the Thai government used tariff protection and controlled the number of textile production facilities[18]. Table 3-4 shows the transition of tariff rates on

[18] See Appendix 1

imported textile goods. As is apparent, the government manipulated international market prices to protect the domestic Thai textile industry.

Table 3-4 Import Tariff of Thai Textile Goods, 1960-80s (%)

	1960-62	62-65	65-68	68-71	71-78	78-82	82-85	85-
Cotton Yarn	-	-	-	25.0	25.0	25.0	27.0	30.0
P/C Yarn	20.0	20.0	20.0	20.0	20.0	20.0	22.0	30.0
P/R Yarn	20.0	20.0	20.0	20.0	20.0	20.0	22.0	30.0
Cotton Fabrics	22.0	35.0	35.0	60.0	60.0	80.0	66.0	60.0
P/C Fabrics	37.0	37.0	40.0	60.0	60.0	80.0	66.0	60.0
P/R Fabrics	37.0	37.0	40.0	60.0	60.0	80.0	66.0	60.0
Clothing	27.5	27.5	30.0	40.0	60.0	100.0	66.0	60.0

Source:Tambunlertchai, S., & Yamazawa, I., Manufactured Exports and Foreign Direct Investment: A Case Study of the Textile Industry in Thailand, 1981.

It is difficult to present in figures what extent Thai government effectively protected its domestic market. However, as based on the information available, it is possible to say that the government strongly protected Thai textile market for domestic firms to develop their technologies. Tambunlertchai & Yamazawa (1981) measured the "effective protection rate" of the Thai textile industry[19]. The rate of polyester cotton (P/C) and

[19]The effective rate is "calculated by adjusting tariffs on output net of those on input and expressing them in terms of the rate of increase in value-added of domestic activity in producing goods competitive with the import concerned" (Tambunlertchai & Yamazawa, 1981)

polyester rayon (P/R) yarns are 20-25 percent, while that of P/C and P/R fabrics exceeded 200% in 1970. Since the effective protection rate was much higher than a nominal protection rate presented in Table 3-4, protection was stronger than the nominal tariff rate.

Table 3-5 Domestic Prices vs Export Prices, 1978-79

		June 14, 1978	Dec. 13, 1978	June 13, 1979
Cotton Yarn	PD(a)	28.9	35-36	35
40s (B/1b)	PX(c)	27.5	34.5	28.0
	PX(d)	27.8	32.0	33.0
Cotton fabric	PD(b)	12.5	14.25	14.25
broad cloth grey	PX(e)	9.2	12.4	10.6
2210,50" (B/yd)	PX(e)	8.2	11.6	10.4
P/C Yarn	PD(a)	38.25	38-39	38-39
45s (B/1b)	PX(d)	27.6	35.4	33.4
	PX(d)	27.0	32.0	30.0
P/C fabric	PD(b)	11.55	14.2-15.0	14.5
186 threads	PX(e)	9.4	12.3	10.8
47 grey (B/yd)	PX(e)	9.6	12.2	-

PD (Domestic price): Weekly average price at San Pen market.
PX (Export price) : export price of South Korea and Taiwan
(a)-(e) attached to specify the form of payment, such as (a) cash, (b) at 60 days sight, (c) C&F, (d)F.O.B., and (e) at sight.

Source: Tambunlertchai & Yamazawa, Manufactured Exports and Foreign Direct Investment: A Case Study of the Textile Industry in Thailand, 1981.

The effect of these policies can also be shown as price difference between the international and the local Thai markets. Table 3-5 compares these differences at the end of the 1970s.

Domestic prices were higher than international ones.

Adding to the figures, there were several "unrecorded" facts which shows the government's protection of domestic market. In 1966, because of a recession in Japan, its small- and medium-sized trading companies delivered bad quality fabrics to Thailand to be sold at extremely cheap prices[20]. For example, the share in total Japanese export goods to Thailand of textile filament fabrics which Japanese large-sized trading firms sold was only 35.1% in amount and 49.5% in value in 1966. In order to avoid market chaos, the government believed its protection was necessary. Furthermore, the determinants of consumers' selections, whether imported Japanese goods or Thai products, were not only price but also credibility of quality. To compete with the high credibility of Japanese goods, high tariff protections were necessary.

> "At first, we had a hard time in Thailand because Japanese textile goods were of good quality and good reputation. The Thai government guaranteed our profit by implementing high tariffs on imported goods." (President of Thai Toray Textile Mills, Japanese Chamber of Commerce, 1970)

In the early 1970s, the Thai textile industry completed import substitution[21]. Thai domestic textile production not only fulfilled domestic demand but exceeded it. Furthhermore, Thai market had a problem of oversupply of domestic textile goods.

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[20] Japanese Chamber of Commerce, 1966.

[21] Figures 3-1, 3-2

Domestic textile goods were sold in the Thai textile market, San Pen. San Pen not only sold products for the Thai domestic market but also for its border businesses[22]. However, when border countries became Socialist in 1973, the sales routes to these areas were closed, and producers faced a problem of oversupply. In response, San Pen considered selling its stock at extremely cheap prices to unload its inventory, but the government tried to avoid this situation[23]. The government shifted its strategy from import substitution to export promotion. It restricted production in the domestic market and promoted production for export goods[24]. The government tried to shift production from the domestic market to the international one (Interview #5). Figure 3-3 illustrates the export promotion policy of the Thai government. However, to export, Thai firms first had to improve their quality so that they would be competitive.

The weakness facing exports by the Thai textile industry was the difference in levels of quality acceptable in the domestic market and those expected in the international one. To export to international markets, Thai producers had to improve their technology. For example, in the Thai domestic market, goods are often sold by "chop", since the Thais are used to purchasing

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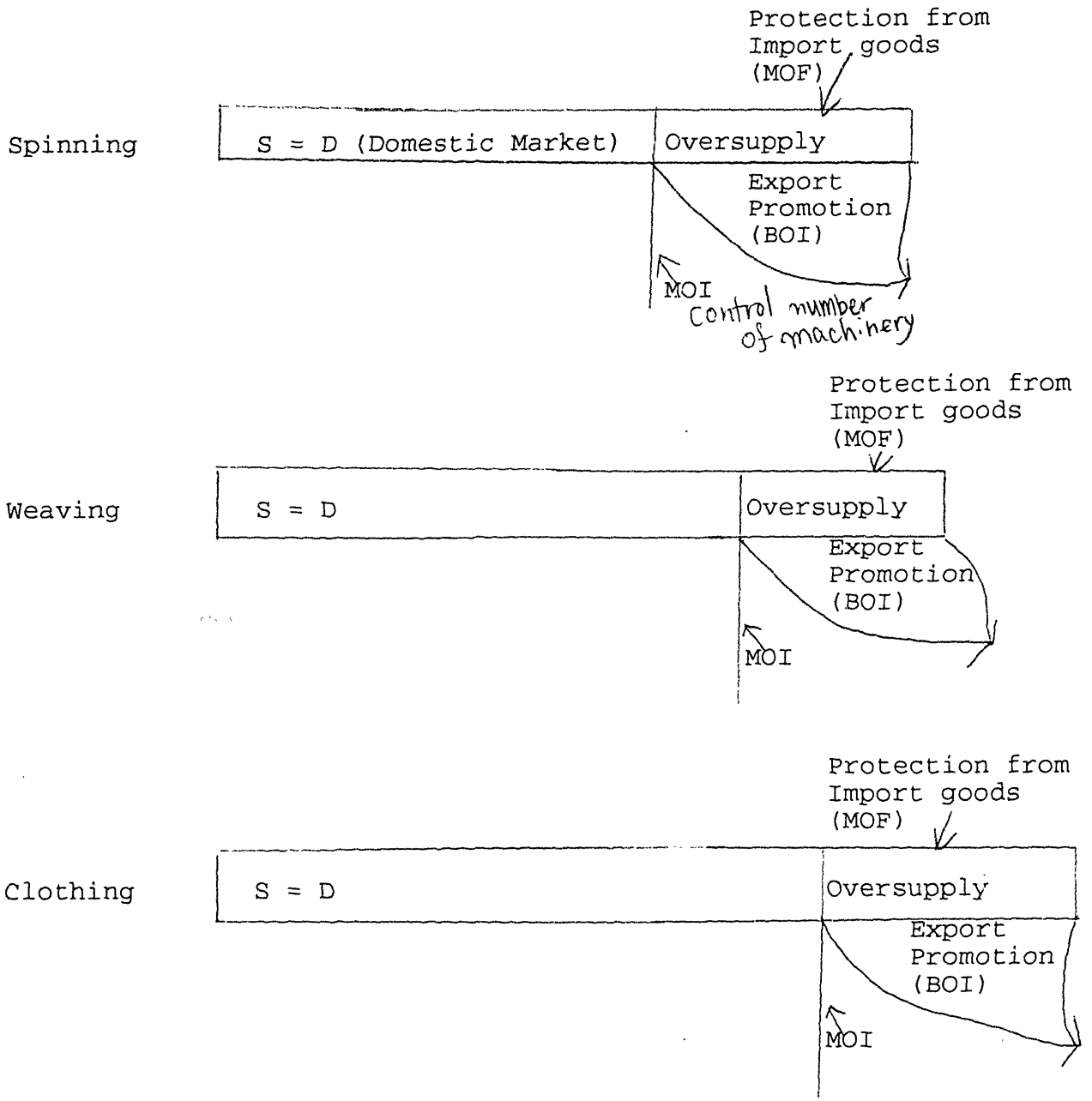
22 For Thai textile producers, sale in the Laotian, Cambodian and Vietnamese markets held a very important share of their total sales, approximately 20-30%. This amount of sales were not listed in trade statistics.

23 Japanese Chamber of Commerce, 1975

24 See Appendix 1

Figure 3-3 Export Promotion Policy



BOI: Board of Investment
MOI: Ministry of Industry
MOF: Ministry of Finance

fabrics and having tailors make their clothes, while the producers had to export Thai textile on "rollers." If there were inconsistencies on one part of a roll (Figure 3-4), the producers could sell it to the domestic market because they could cut out the part with the poor quality, that is, they could separate the roll and sell the fabric by chop, but they could not export the same roll to the international market (interview #9). Furthermore, "most Thai consumers have never examined the number of faults in one square yard while international purchasers insist on the fewest number of faults. They (Thais) pay for both low quality and high priced items (Ajanant, 1985:73)." Therefore, for domestic producers to sell in the international market, they had to improve their production technology; producers needed to purchase a new type of machine, the shuttleless loom, which has a very low probability for these kinds of defects and produces fabric much more quickly than the shuttle loom. Furthermore, exporters needed a more sophisticated sales technology; i.e., producers had to pack goods properly, while they did not need to do so for sale in the domestic market[25].

Furthermore, because domestic price of textile goods were higher than international one (Table 3-4), producers needed to produce less expensive, better quality goods for export. Consequently, many Thai firms preferred to produce for the

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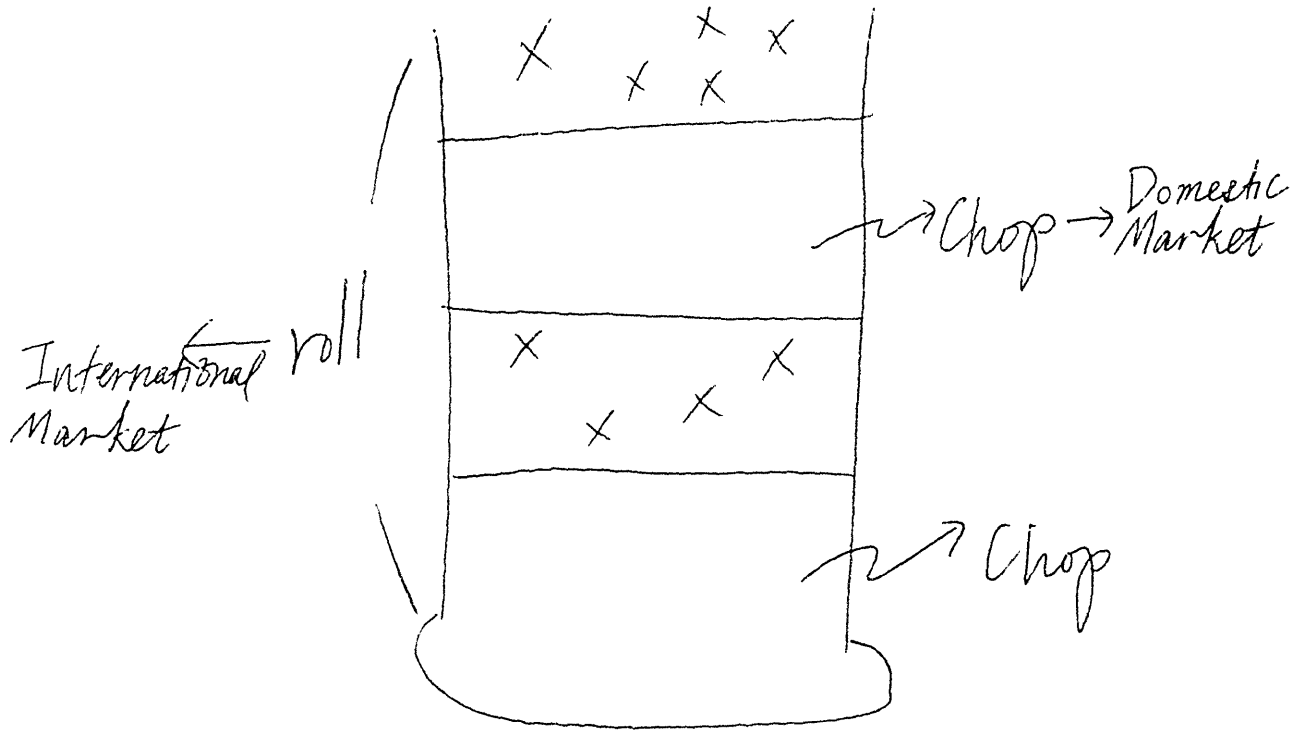
[25] Yamazawa & Tanbunlertchai, 1981

Figure 3-4 Difference of Weaving Quality between Domestic and International Market



domestic market rather than the international one[26]. To promote exports, government export promotion program was necessary.

To overcome these problems, the government implemented policies which improved the quality of textile goods. First, BOI established a set of conditions under which it would not aid firms unless they reinvested in new machinery. On the other hand, to deal with a problem of oversupply, the government restricted production facilities used for the domestic market, while it exempted import tariffs on input materials for yarn, fabrics and clothing exporters.

Simultaneously, the government promoted technology transfers within multinational firms. For example, the Foreigners' Occupation Control Law restricted the number of working visas issued to foreign personnel, and thereby initiated the replacement of foreign management and technical personnel in MNCs with Thai personnel.

Thai textile firms also tried to export their goods to solve their problems of oversupply. Both large-sized local firms and MNCs also started exporting in 1973-74. According to Government records, all of the cotton and man-made fiber exporting fabric firms were MNCs and local large sized firms in 1973[27]. Consequently, as shown in Figures 3-1 and 3-2, the export production ratio started to exceed the import domestic demand

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[26] Japanese Chamber of Commerce

[27] Ministry of Commerce, 1973

ratio in cotton and man-made fabrics in the middle of the 1970s.

Table 3-6 Export Performance of Fabrics in 1976 and 1977

(Mil. sqy)

	1976	1977
Cotton fabrics	113	107
Man-made fabrics	133.5	165
P/C	130	N.A.
P/R	3.5	N.A.
Fabrics total	246.5	272

Source: Yoshino, S., "The Thai textile industry" (Kaifuku no ichizirushii Thai no senni sangyo), in Kasen geppo, October, 1978, pp.3-7.

In particular, textile exports expanded quickly in 1977-78 when the international market started to recover rapidly and these firms were able to benefit from utilizing the export incentives provided by the government[28]. In 1978, because of the appreciation of the yen, a trade agreement with Laos, and a shortage of supplies in South Korea and Taiwan, Thai textile exports began to increase[29]. Export increased in standardized fabrics, especially in P/C products. Table 3-6 shows the Export performance in 1976-77. Since Japanese trading companies introduced polyester cotton products in 1968, the Thai textile industry has developed with the largest share of P/C goods of all cotton and man-made fabrics.

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28 Teravaninthorn, 1982

29 Yoshino, 1978

Export of cotton fabrics also increased: since producers use the same production facilities for both cotton and polyester fabrics, many firms produce both fabrics.

3.3 Technological level of firms in weaving export expansion period: the 1970s

This section compares "production technology" and "sales technologies" of FDI and local firms. Comparison of the technological levels of each type of firm makes it clear in what ways technology developed in this period.

3.3.1 Physical production technology

Whether the level of technology satisfied the international market differed depending on the products. As for production of grey fabrics, which is relatively easy to master the technology for, many local and foreign large-sized firms mastered production technology completely, and many exported their products to advanced counties, such as those in the EC countries. Half of cotton and polyester weavers had dying facilities. Since it was more difficult to master the production technology for dyed fabrics, the quality of these products did not meet the standards set in advanced countries, and these fabrics were exported to Middle Eastern and Asian countries. And since it was difficult to master the production technology for polyester/rayon (P/R) fabrics, only grey fabrics were exportable to EC countries. As for filament fabrics, since "the world's most modern water-jet loom is

not yet available in Thailand[30]," the technology level of filament was not as high as the international level. Filament fabrics require a far more difficult technology, and only local firms which produced jointly with foreign ones were able to produce these fabrics. As for the domestic market, demand for filament was not so large, and most products produced were for the border businesses[31]. On the other hand, in the spinning sector, 95% of the firms were large firms, at least 20,000 spindles[32], and spinning plants were generally modern[33] .

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30 Teravaninthorn, 1982

31 Tambumlertchai & Yamazawa, 1981

32 Teravaninthorn, 1982

33 Ajanant, 1985

Table 3-7 Share of FDI and Local Firms in Total Production Facilities in 1972 and 1979 (%)

		Spinning	Weaving	
			Spun	Filament
FDI	1972	49.7	23.7	90.2
	1979	29.1	18.7	25.9
Local Large-sized*	1972	50.3	18.8	0
	1979	68.1	22.5	55.1

*: Local large-sized firms include members of TTMA[34] except for MNCs.

Source: Japanese Chamber of Commerce, Production Facilities in Thailand, 1979.

During the 1970s, large local firms expanded their production share in textile industry. Because of the recession in the middle of the 1970s, several MNCs withdrew from Thailand. Thai local firms, especially local business groups, such as Sukree and Saha Union, took over these firms and expanded their production. Table 3-7 shows that by 1979 local firms held a larger share of spinning and weaving production compared to 1972.

On the other hand, the level of production technology of small-sized firms was extremely low. "Most small- and medium-scale weaving firms still use semi-automobile one shuttle and four-shuttle looms of domestic origin or second-hand looms imported from Hong Kong" (Teravaninthorn, 1982:43). The production share of small and medium sized firms declined, because they had neither acquired new production technologies nor were their sales

[34] See Appendix 2.

technologies internationally competitive; as a result they were not readily able to export their goods. Table 3-8 compares the production shares and productivities of small- and large-sized firms. In the Thai textile industry, most large-sized firms generally belonged to the Thai Textile Manufacturing Association (TTMA), while many small and medium sized firms belonged to Thai Weaving Manufacturing Association (TWMA)[35] (Appendix 2). As evidenced by this table, since TWMA firms did not increase their productivity, their share of production was reduced during this period[36].

Table 3-8 Share of Production and Productivity of TWMA in 1961,75, & 79

	1961	1975	1979
Number of looms owned by TWMA firms	4,120	12,700	20,514
Share of total number of looms (%)	59.9	26.6	35.6
Production of fabric by TWMA firms (Mil.sqy)	41,155	147,800	233,300
Share of total production (%)	48.1	16.2	16.0
Productivity per loom of TWMA (Mil.sqy)	10.0	11.6	11.4
Productivity per loom of the other weaving firms (Mil. sqy)	15.0	21.1	33.2

Source: Suehiro, A., 1981.

Because of the recession and the prohibition against

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35 Family-sized firms (three or four workers) were not included by TWMA.

36 Suehiro, 1981

conducting border business with Vietnam, Cambodia, and Laos, small sized firms did not, like large-sized ones, start exporting in 1974. These small firms did not start to export until 1977-78[37]. However, the increase in exports of 1977-78 was attributed to the lessened cost competitiveness of Japanese firms and the lack of production facilities in competitive countries[38]. Therefore, considering their low level of productivity and technology, the competitiveness of small firms was based solely on their "short-term competitiveness" and consequently can be thought of as unstable or temporary. For example, "to produce shirting of stable fibers, large firms use shuttleless looms and piece-dyed technology, while small- and medium-sized firms use semi-automatic four shuttle looms and yarn-dyed technology. Although both produce different quality products that are labelled under the same category, "shirting" (Teravaninthorn, 1982:54), the production technology of small- and medium-sized firms was not advanced.

3.3.2 Sales technology

As for levels of sales technology, there was a dual structure between large-sized, and small- and medium-sized firms. Large-sized firms, most of which exported, had their own exporting strategies[39]. They worked assiduously toward increasing their exports, and paid much attention to product quality and punctual

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37 Teravaninthorn, 1982

38 Yoshino, 1978

39 Yamazawa & Tanbunlertchai, 1981

delivery. They also tried to establish stable export channels, and strove to meet export ratio targets which they established by themselves[40]. FDI firms and local large-sized firms which had entered joint-ventures with MNCs obtained their export channels through, for instance, Japanese trading companies. Table 3-9 shows how local large-sized firms succeeded in exporting. This table selected exporting firms from firms which Tanbunlertchai & Yamazawa (1981) interviewed. Among 11 exporting firms, all firms were related with trading companies, including Japanese trading companies. Some local firms exported directly, or through trading companies affiliated with their business groups. Table 3-8 illustrates increases in the sales records of Texport International Corp. Ltd., a trading company of the Saha Union Group. This company was granted promotional priviledges[41] by BOI, which set the target of export value to each promoted firm. Texport largely exceeded this target in every year. This table shows that successful export performance of this textile business group.

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[40] Teravanithorn, 1982

[41] This company obtained exemption of business and income taxes by BOI.

Table 3-9 Export Performance of Texport International Corp. Ltd. in the Late 1970s (Mil.Baht)

Date of Operation January, 1979

	1st year	2nd year	3rd year
Performance	635.1	874.4	1,216.2
Target	300.0	400.0	500.0

Source: Ajanant, 1983.

Table 3-10 Thai Local Large-sized Exporting Firm

Firm	Stake of Foreign companies	Sales route
Bangkok Weaving Mills	JTC	Export: Japanese or their own route
K. Cotton & Gauze Co., Ltd.	None	JTC for Export San Pen for domestic market
Royal Textile Co., Ltd.	None	JTC for Export San Pen for domestic market
Siam Synthetic Textile Industry Ltd.	JTC, Toray	Production: Japanese Sales: Japanese
Siam Synthetic Weaving	JTC, Kanesho	JTC or other trading companies for export
Thai Durable Textile	Taiwan	Thai trading companies or their own route for export, San Pen for domestic market
Thai Filament Textile	Teijin,	Production: Japanese JTC for export San Pen for domestic market
The Thai Textile Co.	Teijin, Fujibo, Toyota	JTC or other foreign trading firms for export, San Pen for domestic market
Thai Weaving & Knitting Factory	None	JTC or Thai trading firms or their own routes,San Pen for domestic market
Unity Textile, Ltd.	None	JTC or their own route San Pen for domestic market
The Winner Textile	JTC, Toray	JTC

JTC: Japanese Trading Company

Source: Japanese Chamber of Commerce, Suehiro, A., Capital Accumulation in Thailand, 1989. Tambumlertchai & Yamazawa, Manufactured Exports and Foreign Direct Investment: A Case Study of the Textile Industry in Thailand, 1981.

On the other hand, small- and medium-sized firms had little or no sales technology; they did not have any exporting channels or strategies, and were unable to contract with Japanese trading companies because of the low quality of their goods (Interview #20, #21). Instead, these firms developed export channels through friends or relatives living in other Asian countries. Even if most of them were able to export, they lacked long-term export strategies[42] .

3.4 Industrial structure

Table 3-11 Integrated Firms in Spinning and Weaving Sectors in 1972 and 1979

	1972	1978
Integrated firms	18	24
Spinning		
Number of spindles	596,520	972,084
Share of total spindles (%)	82.0	83.8
Weaving		
Number of looms	11,113	20,213
Share of total looms (%)	58.3	65.9

Source: Suehiro, A., 1980.

There was strong integration within competitive firms through spinning, weaving and dyeing factories. Table 3-10 shows the production facilities share among integrated firms. Most large-sized

[42] Teravaninthorn, 1982

firms had both spinning and weaving sectors. Labor productivity of integrated exporting firms (9,144 baht per month) was higher than individual firms which had over 200 employees (7,770 baht per month)[43]. Thus, many large-sized firms created inter sector competitive linkages by themselves.

Table 3-12 Production Share of the Seven Groups in 1976

	F/L*	Capital	Sales	Number of Spindles**	Number of Looms**
Teijin	F	2,806.9	1,020.7	41,504	1,008
Praman	L	530.8	340.1	62,560	600
Toray TAL	F	1,597.7	944.3	60,848	1,882
Sukree	L	2,137.5	1,090.8	106,280	2,948
TDT	L	2,118.3	991.2	141,256	3,520
Marubeni	F	324.1	324.7	30,728	1,000
Total		11,393.8	5,439.0	661,752	13,965
Share in entire textile firms (%)		85.0	76.4	61.5	28.6

*: Foreign managed or local managed

** 1975.

Source: Suehiro, A., 1979.

MNCs created industrial linkages by cooperating with other local large-sized firms. Figure 3-5 illustrates linkages between MNCs and local large business groups. Based on Table 3-11, which shows capital accumulation and sales of these seven business

[43] Suehiro, 1982

groups, these groups held the largest share of production of the Thai textile industry. Although the other local large-sized firms also created these linkages[44], the share of seven business groups was extremely large in total sales and capital in the Thai textile industry. Sukree, Toray, and Teijin created the largest size of inter-sector linkages; they established the entire production system of the textile industry, including fiber producing, spinning, weaving, dyeing and clothing by the middle of 1975[45]. These three group also created inter-sector linkages of other large-sized firms by providing polyester and nylon staple fibers[46], so that other large-sized firms did not need to import man-made staple fibers. Two MNC groups also created competitive inter-firm linkages with local firms; Teijin had a close relationship with the Praman group, while Toray had one with the TAL group.

Other local large-sized firms also linked to other large-sized firms by providing their products; not only Toray, but Hantex and Asia Fiber provided Nylon fiber to other large-sized firms. Therefore, in terms of industrial structure, both the MNCs and local business groups produced inter-firm linkages to produce standard products of cotton, P/C and P/R fabrics. Since these large-sized firms held large share of production (Table 3-8), it is possible to say that competitive firms belonged into industrial

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[44] Eight integrated spinning and weaging firms did not belong to any seven business groups in 1972.

[45] Suehiro, 1979

[46] Suehiro, 1982

linkage in the 1970s.

On the other hand, small- and medium-sized firms were not able to join any industrial linkages. Instead they purchased dyed yarn from separate yarn producing firms, and produced fabrics which needed no further processing nor finishing[47].

Figure 3-5 Industrial Linkage within Textile Sector

Group	Man-made Fiber	Spinning	Weaving	Dyeing
Teijin	Teijin Polyester	Thai Teijin (P/R)		
		Thai Filament (P/F)		
Praman		Thai Textile (P/C, C)		Textile Finishing
		Thai Cotton (C)		
Toray	Toray Nylon	Siam Synthetic (N/PF)		
		Toray Textile (P/R)		
		Thai Kurabo (P/C)		
TAL		Luckytex (P/C)		
Sukree	Thai Mellon Polyester	Thai Synthetic (P/C)		Thai Tricott
		Thai American (P/C)		
		Thai Blanket (P/C, C)		
		Thai Cotton Mills (C)		Siam Dyeing
TDT		Thai Durable Textile (P/C, C)		
Marubeni		Erawan Textile (P/C, C)		Tokai Senko
		Dusit Textile (P/C, C)		

Source: Suehiro, A., "The Thai Textile Industry and Japanese Multinational Companies," Asia Economy, XX-1, January, 1979.

47 Ajanant, 1985

3-5 Determinants of technological development

Why were only large-sized firms able to develop their technology? Primarily, two reasons are evident. First, large-sized firms had or obtained a certain amount of capital accumulation. To export and to improve physical production technologies, producers needed to purchase new types of weaving machines, such as shuttleless looms. However, the price of a new shuttleless loom was ten to fifteen times higher than that of a secondhand loom[48] .

To meet strict specifications, and to improve such production skills as process innovation, production control, and punctual delivery, highly qualified technical and managerial staff was necessary. There were also dual levels characterizing the quality of human resources. In large-sized firms, workers had an educational background of at least seven years primary education, while many workers in small and medium sized firms were unskilled laborers coming from rural areas. To train a highly qualified managerial and technological staff, firms needed a large amount of capital: "training people for textiles requires big investment in laboratories and pilot plants; professors and instructors have to be kept up-to-date with technology and administrative practices and must be sent abroad regularly."[49]

Among large-sized firms, MNCs had large capital resources,

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[48] Teravaninthorn, 1982

[49] Ajanant, 1985

such as three Japanese textile MNCs in Thailand (Table 3-11). Several local firms had also saved large amounts of capital, and could afford to start large-sized business; these firms came from commercial groups which had historically accumulated capital in Thailand[50]. Added to this, large-sized local firms also had a number of opportunities to obtain financial funds and advanced technology. Many of these firms received capital and advanced technology from foreign firms in industrial countries, especially with Japanese firms. Table 3-12 illustrates the expansion of textile firms by the two largest textile business groups, Sukree and Saha Union. For example, when Sukree established the Thai Blanket Industry, Japanese MNC and trading company owned half of the capital and provided up-to-date machines from Japan, while Sukree provided the rest of the capital, land and factories[51]. As for Thai American, Japanese MNC and trading company also supported the technological development of this factory. A French MNC capitalized 50% of the Thai Melon Polyester Co., Ltd. These firms also sought capital investors for their family members and the other firms of their group, and were able to obtain capital from the Bangkok Bank[52].

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[50] Suehiro, 1982.

[51] Suehiro, 1980.

[52] Suehiro, 1989.

Table 3-13 Industrial Linkage of Sukree and Saha Union

Year	Name	Business	JV firm
Sukree			
1964	Thai Blanket Industry	Spinning & Weaving Cotton	Japanese textile JTC
1966	Thai Tricott Co., Ltd	Dyeing	Japanese textile JTC
1968	Thai Synthetic Textile Co.,Ltd.	P/C spinning and weaving	Japanese textile JTC
1969	Thai American Textile Co.,Ltd.	P/C, P/R spinning and weaving	Japanese textile JTC
1970	Siam Dyeing & Printing Co.,Ltd.	Dyeing & Printing	
1972	Thai Iryo Co.,Ltd.	Garments	Japanese clothing, Japanese textile
1972	Thai Melon Polyester Co., Ltd.	Polyester staple	French textile
1979	Thai Li Printing Co., Ltd.	Dyeing & Printing	
1981	Thai Kree Textile Co.Ltd.	Cotton dyeing	
Saha Union			
1971	Union Kanebo Spinning Mills Co, Ltd.Cotton, (Union Spinning Mills)	Spinning, Weaving P/C	Japanese textile (Withdrew)
1972	Saha Union Corp., Ltd.	General trading	
1973	Union Thread Industries	Cotton & Synthetic thread	TFB
1973	Union Olympus Co., Ltd (Union Novelty Yarn)	Embroidery & crochet thread	Japanee textile BBK
1974	Union Knitting Yarn Co.,Ltd	Knitting	
1974	Union Garment Co., Ltd.	Garments	
1977	Union Textile Industries, Co., Ltd.	Spinning,Weaving, Dyeing, Bleaching	TFB
1978	Texport International Co.,Ltd	General Trading	
1980	Thai Cotton Enterprise	Cotton Cultivation	

FTB: Thai Farmer's Bank
BBK: Bangkok Bank

Source: Japanese Chamber of Commerce, Suehiro, A., Capital Accumulation in Thailand, 1989.

On the other hand, more than 80% of the initial investment funds small- and medium-sized firms used were self-financed, while the rest of the funds were raised from relatives and acquaintances. Since the stock market was not well developed in Thailand, these smaller businessmen were not able to borrow from the commercial banks because their credibility was too low[53]. None of the small- and medium-sized firms entered into joint ventures with MNCs. Furthermore, they were not targeted for government support; BOI only supported those firms with a large percent of exports in total production and 10 million bahts as preparation for investment in and purchase of modern machinery (Appendix 1). At that time, both conditions were impossible for small- and medium- sized firms to meet. Thus, these smaller firms faced a difficult cycle: they lacked enough capital to acquire advanced technology; they were unable to satisfy the requirements for government support, and they were not able to develop their technology.

Second, small- and medium-sized firms in developing countries often lacked the sort of business ability that enables firms to analyze what kind of goods would be in demand in the market, determine what kind of goods a firm should produce, and with which companies a firm should contract joint ventures. One of the reasons for this is that entrepreneurs in developing countries have a different "concept of quality standards" and "the maximum permissible limit for defects" (JICA, 1989: I-56). In contrast,

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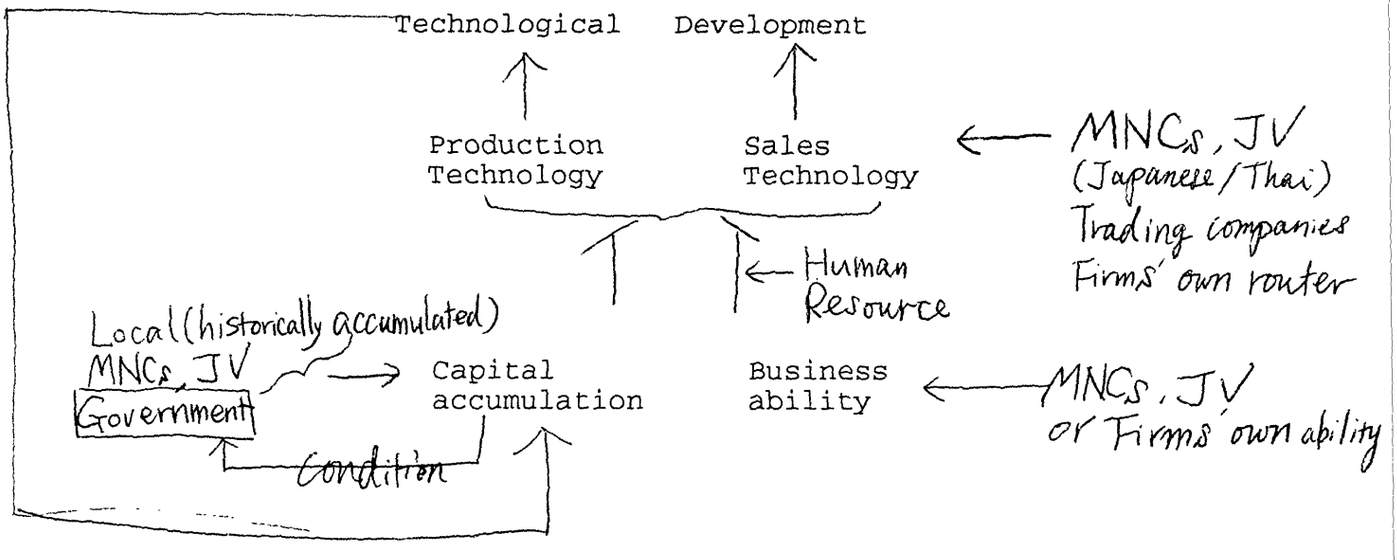
[53] Teravaninthorn, 1982.

large-sized firms had more sophisticated business ability. As shown in Table 3-12, Sukree obtained advanced production technology by joint ventures with several Japanese and European textile firms. For instance, the Thai textile industry experienced a polyester cotton boom in 1968, and Thai American Textile, in the Sukree group, determined to take advantage of this boom to expand its production. This business ability resulted in products that were in demand. The Sukree group also improved their production and sales technologies by cooperating with MNCs. In other words, large-sized local business groups had already accumulated capital, and had acquired a sense of business ability, which enabled them to obtain a position of long-term competitiveness.

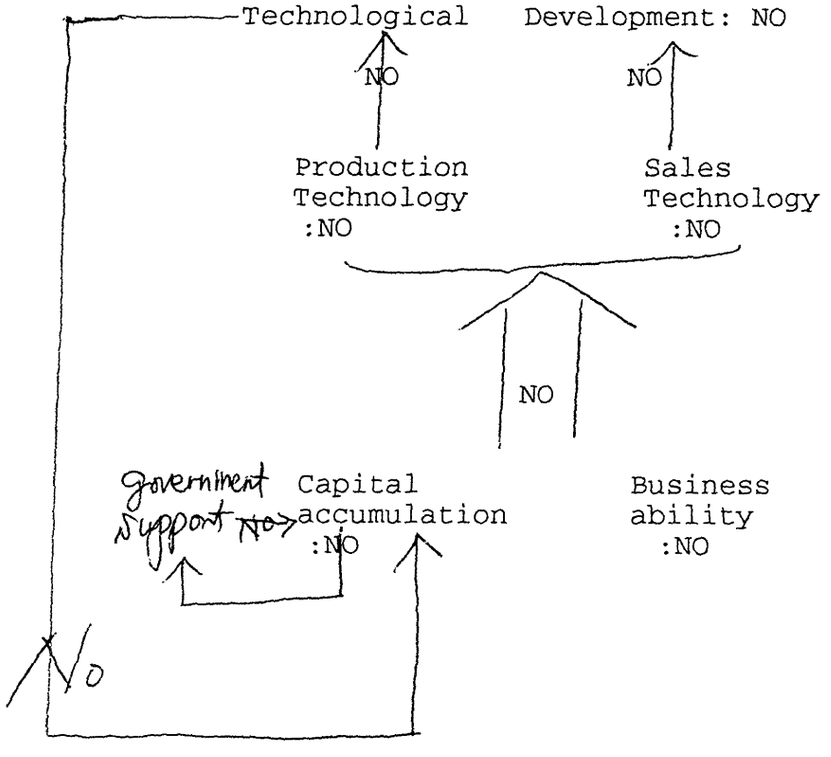
Figure 3-6 compares the positive cycle experienced by large-sized firms with the negative cycle experienced by small- and medium-sized ones. Large-sized firms expanded their production and improved their technology based on their business abilities and opportunities to gain financial funding. As a result, they were able to receive government support. On the other hand, small- and medium-sized firms lacked the financial resources and information needed to improve production and sales technologies; they did not have any opportunity to contract with large-sized firms, and they did not obtain any information about what kinds of goods were in demand in the market. As such, they had few opportunities to export because of their low production technologies and lack of knowledge about export strategies and channels (interview #20). Since they did not satisfy conditions for government support, they could not

Figure 3-6 Positive and Negative Cycles

Positive Cycle of Large-sized Firms



Negative Cycle of Large-sized Firms



acquire any government assistance for exports. Thus, these firms reduced production, and provided traditional products for sale in the domestic market, which was protected by tariffs.

3.6 Conclusion

This chapter analyzed the industrial competitiveness in the 1960-70s. In this period, the industry was characterized by the fact that large-sized firms, especially MNCs or Thai large-sized firms closely related to MNCs, led development of entire textile industry. Table 3-13 summarizes the technological level of each type of firm and product.

Table 3-14 Technological Level of Each Type of Firm and Product in the 1970s

	Large		Small
	Standardized	High value-added	Standardized
Production technology			
Machine	International	Domestic	Less developed
Skill	International	Domestic	Less developed
Sales technology	International	---	Less developed

* International level means the level which firms are able to export to industrialized countries, while domestic level means the level which firms are able to export only in the Middle East and Asian developing countries.

The role of the FDI on technological development of the Thai textile industry was important. Seven largest business groups of the Thai textile industry were FDI or firms which conducted joint

venture with MNCs. Based on the analysis of this section, factors which improved industrial competitiveness in the 1970s were production technology, sales technology, capital accumulation and business ability of large-sized firms. FDI supported all of these factors of their own firms, and supported some factors of local firms which were closely conneceted with MNCs in advanced countries, by contracting and creating business linkages with them. Therefore, also judging from the fact that FDI created these competitive inter-firm linkages, the role of FDI was extensive in the development of the Thai textile industry.

Government policy supported the effect of FDI on industiral development. When FDI started in the 1960s, the government implemented policies which helped MNCs gain large share in the Thai domestic market. In the 1970s, BOI supported not only MNCs but also other local firms of which technologies were not directly supported by MNCs. The share of production facilities of MNCs and firms related to these MNCs was approximately 60% in spindles and 22.5-28% in looms. Based on Table 3-2, the share of BOI promoted firms exceeds the MNC's share of production facilities. Based on Table 3-9, there were some large-sized firms all of whose stakeholders were Thais. The government supported capital accumulation of the rest of large-sized firms which FDI did not support development of production technology by investment and export promotion policies and protection of domestic market (Table 3-2).

Therefore, it is possible to conclude that the roles of the FDI in this period were extensive and the government supported this

development to extend this competitiveness to the all large-sized textile firms.

4. Clothing Export Expansion: 1980s-present

This chapter examines whether the Thai textile industry has been competitive based on its relationship with the clothing industry and ability to meet the needs of clothing industry. It also discusses whether FDI provided technical leadership or the government role increased in this period.

As shown in Figure 3-2, the import of man-made fiber fabrics has increased again through the 1980s, even after completion of import substitution in the 1970s. This section examines why consumers of these fabrics, clothing manufacturers, have imported fabrics, not purchased domestic fabrics by analyzing the technological level of the Thai textile industry.

4.1 Increases in clothing exports

Since the beginning of the 1980s, the industry has been characterized by the rapid expansion of its clothing sector. Table 4-1 shows the export value of Thai clothing and textile products. At the beginning of the 1980s, textile exports were exceeded by clothing exports, and at present, clothing exports account for approximately three-fourths of total textile exports. Several factors led to the increase in Thai clothing exports. The US and EC countries, which were large importers of Thai textiles, began to restrict their import volumes in 1974 under the Multi Fiber Agreement (MFA). When South Korea and Taiwan became internationally

Table 4-1 Export Performance of Textiles and Clothing, 1972-92 (Mil.B, %)

	Textiles		Clothing		Total(100%)
	Value	Percent	Value	Percent	Value
1972	350.4	59.8	240.2	40.2	596.6
1973	943.6	64.1	664.4	35.9	1,848.9
1974	943.6	53.3	827.9	46.7	1,771.5
1975	833.4	45.5	1,038.4	55.5	1,871.8
1976	2,476.9	61.8	1,531.6	38.2	4,008.5
1977	2,788.0	62.8	1,654.6	37.2	4,442.6
1978	4,103.0	61.1	2,613.3	38.9	6,716.3
1979	5,143.0	59.7	3,477.8	40.3	8,620.8
1980	4,637.2	49.3	4,760.1	50.7	9,397.3
1981	5,423.7	44.1	6,886.1	55.9	12,309.8
1982	5,770.0	42.2	7,907.4	57.8	13,677.4
1983	5,295.8	37.6	8,790.1	62.4	14,085.9
1984	6,681.3	35.4	12,171.9	64.6	18,853.2
1985	8,524.1	36.9	14,595.5	63.1	23,119.6
1986	10,591.3	34.4	20,162.9	65.6	30,754.2
1987	14,122.4	28.0	36,306.7	72.0	50,429.1
1988	16,621.1	26.5	46,148.4	73.5	62,769.5
1989	19,250.5	24.3	60,059.8	75.7	79,310.3
1990	22,679.6	25.4	66,620.4	74.6	89,300.0
1991	27,277.7	23.7	87,690.8	76.3	114,968.5
1992	29,694.5	24.9	89,386.7	75.1	119,081.2
1993	31,519.1	25.6	91,547.9	74.4	123,067.0
1994	38,017.0	26.9	103,128.8	73.1	141,145.8

Source: Thai Textile Manufacturing Association, Foreign Trade Statistics.

competitive in the 1970s, the MFA favored the Thai textile industry because its quota restricted further increases in exports from South Korea and Taiwan. As a result, even though the Thai textile

industry could not compete with South Korea and Taiwan, Thai textile manufacturers were able to increase their export[54]. In 1984, when this quota for Thai fabrics was nearly filled, it became difficult for Thai weavers to export their products[55]. On the other hand, the MFA clothing quota on Thai products had not been filled. Simultaneously, South Korea and Taiwan began losing their low-cost competitive advantage because of the rapid increase in their levels of wages and the appreciation of their currencies (Table 4-2), while Thai wage levels was controlled so that they could not rise[56].

Table 4-2 Labor Cost Comparison, 1980-93 (Unit:US$/hour)

	1980	1984	1987	1990	1993
Japan	4.35	6.28	11.99	13.96	23.65
Taiwan	1.26	1.64	2.09	4.56	5.76
Hong Kong	1.91	1.65	1.93	3.05	3.85
South Korea	0.78	1.89	1.77	3.22	3.66
Thailand	0.33	0.56	0.58	0.92	1.04
China	-	0.26	0.23	0.37	0.36
Indonesia	-	0.23	0.20	0.25	0.43

Source: 1980-87: JICA, 1989.
1990-93: Textile Industry Division, Ministry of Industry in Thailand.

Given these circumstances clothing exporting firms in Taiwan and Hong Kong shifted their production facilities to Thailand to

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54 Suphachalasai, 1990, Hirose, Y, 1991.

55 Mitsubishi Trading Company, 1988.

56 Yoshioka, 1987.

take advantage of its low-wage levels. This new wave of FDI triggered the export expansion of the Thai clothing industry.

Table 4-3 Production and Export Value of Clothing, 1980-93
(Mil. Bahts, %)

	Production	Export	Export to DCs	Export to LDCs
1980	14,072	4,980	72.0	28.0
1984	26,917	12,628	74.3	25.7
1987	45,599	37,111	58.1	41.9
1990	61,322	66,620	58.0	42.0
1993	98,077	91,547	58.2	41.8

* Export data is shown by FOB price, and production data is based on prices in the Thai domestic market.

Source: Thai Textile Manufacturing Association

Consequently in the 1980s, most Thai clothing manufacturers directed their attention to the international market. Table 4-3 shows the value of clothing production and exports from 1980 to present. This table illustrates that Thai manufacturers consistently progressed toward supplying international markets throughout the 1980s. Table 4-3 further shows the share of destination of the Thai clothing exports. Although the share of developed countries has not increased rapidly because of the MFA, the export shares to developed countries, such as the US, the countries in the EC , and Japan, has remained higher than for

developing countries. This means that Thai clothing manufacturers have needed to improve the quality of their products in order to compete in the international marketplace.

In the 1990s, however, the Thai textile and clothing industries have been facing serious problems concerning wage increases. Based on Table 4-2, wage difference ratio between China and Thailand (Thai wages divided by Chinese wages) increased from 2.52 in 1984 to 2.89 in 1993. Thus, the Thai clothing industry now needs to obtain strong "long-term competitiveness" to deal with wage increase and remain competitive in a long-run.

For the clothing sector to maintain its competitiveness over the long run, industrial linkage with the textile sector is vital. How quickly and constantly a clothing manufacturer can procure its materials often influences its ability to remain competitive, especially since clothing designers constantly have to be responsive to and remain in advance of fashionable trends which:

> "... determine the nature of yarn used (fiber content, spun or filament, bulky or not, etc.), the construction of the fabric (light, heavy, plain, fancy, etc.), and finishing (shiny, dull, soft, hard dyed, printed, etc.) In finishing, dyeing and printing will have different trends in different seasons: light shades or dark shades, big prints or small prints, and motives: geometric, floral and etc. Generally, fashion is created 18 months before the finished product (fabric or garment) reaches the consumer" (Ajanant, 1985:18).

Thus, stylists, designers, spinners, weavers, and dyestuff manufacturers are all actively involved in the clothing production process. In other words, an integrated production system from spinning, weaving, dyeing and clothing is necessary for clothing

producers to be competitive and, consequently, clothings' long-term competitiveness depends on the competitiveness of the spinning and weaving sectors and the industrial linkage between these two sectors.

Table 4-4 Export Share of Clothing Products in the 1980s (%)

	1980	1984	1987
Womens' products			
- Sweaters, women's, girls' & infant dresses	16.04	16.91	19.94
- Dressers, skirts, blouses, sarongs	39.27	40.09	39.93
- Women's, girls' & infant' shirts	2.57	3.17	2.09
- Women's overcoats, suits, trousers, jackets			
Socks & stockings	0.2	0.3	0.4
Shirts, pantyhose, undergarments	4.81	6.83	6.95
Men's & boys shirts & undergarments	14.38	12.87	10.70
Total	100.0	100.0	100.0

Source: Foreign Trade Statistics

In particular, when manufacturers are involved in women's clothing, fashion and season determine the competitiveness of their clothing products[57]. Table 4-4 shows the share of each type of clothing in total exports for Thailand. Share of women's clothing is highest when compared to other types of products. Therefore, for

[57] Cairns, 1981.

Thai clothing export goods to be competitive in the international market over the long run, "long-term competitiveness" of the Thai textile industry is necessary.

Table 4-5 Procurement of Materials of Large-sized Firms at the end of the 1980s (%)

Firms almost 100% import ratios	10.5
Firms with 50% or more import ratios	21.1
Firms with less than 50% import ratios	31.6
Firms with almost 100% domestic procurement	28.9
Unknown	7.9

Source: JICA, 1989.

However, the Thai clothing industry has not necessarily promoted the industrial linkage with textile industry. Table 4-5 shows the result of the JICA survey regarding the procurement of large-sized clothing firms. Consequently, through the 1980s, although the export production ratio of fabric and clothing increased, the import domestic-demand ratio of man-made fabrics did not decrease (Figure 3-2). According to clothing exporters, the reasons why they do not use domestic materials are (1) the quality is too low to export to the international market, and (2) the materials they want are not produced in Thailand[58]. Based on this

58 JICA, 1989.

information, it is possible to say that fabric producers have not necessarily produced what the domestic market demands. Increase in clothing production is not strongly linked to increases in textile production. Thus, from the viewpoint of the clothing industry, the Thai textile industry is not strongly competitive because of shortage of high quality goods and lack of variety. This suggests that as the level of wage further increases in the future, the Thai textile industry will lose industrial competitiveness.

Table 4-6 Import Components of Man-made Fabrics in the 1990s (%)

	Amount		Value	
	1990	1994	1990	1994
Staple fiber bleached/unbleached	28.5	30.4	19.0	25.3
- P/C bleached/unbleached plain	18.7	8.2	11.3	7.5
Staple fiber dyed	5.9	1.9	8.9	4.1
- P/C dyed plain	3.8	0.5	6.3	1.0
Filament	46.0	58.7	55.7	56.3
- 85%/more polyester filament	21.0	13.6	21.5	25.8
- Filament dyed	20.0	38.1	25.5	19.1
- 85%/more Nylon/other polymides dyed	17.2	36.1	21.5	14.8
T/R	10.1	5.6	6.4	5.6
Man-made fabrics (Excludes Knitting)	100.0	100.0	100.0	100.0

Source: Foreign Trade Statistics, 1990 and 1994.

In the next section, in trying to ascertain why both

industries are not linked, I suggest that the textile sector did not improve its long-term competitiveness especially in terms of industrial linkage with the clothing sector in the 1980s. Table 4-6 shows the components of import fabrics in 1990 and 1994. Increases in imports of man-made fabrics can be classified not only as those classified as high value-added, such as filament and dyed fabrics but also standardized fabrics, such as P/C and plain weaves. I discuss why these two kinds of products have problems of quality and variety from the viewpoint of technological development. Furthermore, I discuss what extent FDI played a role in improving industrial competitiveness. In the sixth section, I analyze the role of the government in this period.

4.2 Technological level of standardized goods

Although production of standard fabrics expanded, the share of goods which had only "short-term competitiveness" increased rather than goods which had "long-term competitiveness." The primary factor influencing the expansion of textile production in Thailand was an expansion of clothing production, especially as it related to small- and medium-sized textile firms which were able to reverse the previous decline in their businesses and increase their share of production. Share of spun fabrics production facilities of small- and medium-sized firms increased to 45.7% in 1994 from

35.6%[59] in 1979.

However, the fabric export share of small- and medium-sized firms has not expanded, since they were not able to acquire MFA quotas, which large-sized firms had already obtained and fulfilled[60]. Table 4-7 shows the number of exporting firms of weaving and clothing industries. Compared to clothing, the number of large-sized exporting fabric firms is more than small-sized ones. These factors indicate how production expansion of small- and medium-sized firms was connected to increases in clothing production.

Table 4-7 Number of Exporting Firms in Fabrics (spun yarn) and Clothing Sectors in the 1990s

	Clothing	Fabrics (spun yarn)
Large-sized firms	47 (85.4%)	18 (66.7%)
Medium-sized firms	20 (51.3%)	
Small-sized firms	47 (38.8%)	1 (0.9%)

* Textile large sized firms includes member of TTMA, the others are categorized as small- and medium-sized firms listed in Production Facilities, Japanese Chamber of Commerce, 1994 or listed as a member of TWIA.
** Figure is number of registered firms listed as "exporting companies" in the government record.
*** % presents the share of total number of firms for each category.

Source: Japanese Chamber of Commerce, 1994.
Thailand Export Monitor, 1991-92, Alpha Research
Board of Trade of Thailand, Export & Import Directory, 1992-93.

However, does this mean that small- and medium-sized weaving

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[59] Japanese Chamber of Commerce, 1994.

[60] Mitsubishi Trading Companies

firms will be able to maintain their industrial competitiveness even when wages increase? The answer is NO. These firms have never been able to match the high quality goods produced by the integrated spinning and weaving facilities of large-sized firms.

> Judging from the situation observed regarding the yarn break number in the fine spinning process and the uneveness of yarn showing in warping at the weaving plant, the quality of yarn was generally good. This is probably due to the selection of certain quality cotton and the effect of blending (JICA, 1989).

However, only integrated spinning firms with weaving factories produced yarn which could be used with advanced machines, such as high speed and high density air jet looms and circular knitting machines. Most of these yarn products were delivered to their own large-sized weaving factories. Individual weaving firms were not able to purchase such yarns, therefore, even if they introduced air jet looms, the yarn they purchased could not be used with such advanced machines[61].

Furthermore, small- and medium-sized firms did not develop their "production skills." They were not able to obtain any production skills which enabled them to conduct R&D and establish technical knowhow. Some member firms of TWIA introduced shuttleless looms based on sales increases brought about by expansion of clothing production: "because of expansion of clothing products, we could find the market and accumulate our capital."(interview #21). They said, "we are trying to improve our

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61 JICA, 1989.

products' quality. Because of wage increases, consumers' expectations are changing; they expect us to diversify products, and improve quality." (interview #21) However, their ability to utilize modern machinery is not as developed as that of large-sized firms: " we cannot trust the product quality of small- and medium- sized firms, because when we visited their factories it was apparent that their production systems were not as good as those of large-sized firms" (interview #22).

These factors explain why, even though the textile industry expanded production, the product quality of small- and medium-sized firms, which expanded their share of total weaving production, did not improve.

Furthermore, this production expansion was not related to improvement of machinery in the entire textile industry. Table 4-8 shows labor productivity, average value of machinery, and sales value per worker of weaving firms which have more than twenty workers. Because of production increases in clothing, textile firms increased their sales and labor productivities. However, the value of machinery declined after it peaked in 1984. Therefore, although product sales increased, the level of their physical production technology did not improve during the second half of the 1980s.

> ...most of the equipment used for the mass production of 20'S-40's has not been renewed since the plants were first established due to surplus production by manufacturers of standard products and the pressure which this surplus has put on the market price...Although standard spun yarn using this sort of equipment may be acceptable for the domestic market and for export to the Middle East which is not so stringent, there is the danger of being subject to claims if the yarn is exported to Japan where the requirements regarding quality are stricter.(JICA, 1989).

Table 4-8 Labor Productivity, Average Value of Machinery for Each Firm, and Sales Value per Worker, 1979-91

	Labor productivity	Value of machinery	Sales value/worker
1979	217.0	30173.2	176.7
1982	287.0	56565.1	267.1
1984	377.5	120360.8	326.3
1986	377.5	94642.7	364.0
1989	499.8	39509.6	407.6
1991	563.2	81713.5	484.1

* 20 less presents firms which employ less than 20 workers, and 20 more presents firms which employ 20 workers and more.
** value of machinery shows average value of machinery per firm.

Source: 1979-1984: National Statistical Office, Report of the 1980, 1983, and 1985 Industrial Census Whole Kingdom.
1986-1991: National Statistical Office, Report of the 1987, 1990 and 1992 Industrial Survey Bangkok Metropolis, Nonthaburi, Pathum Thani and Samut Prakan.

In conclusion, from the viewpoint of clothing manufacturers, long-term competitiveness of the standardized weaving production was not highly improved during the 1980s. In particular, small- and medium-sized firms did not acquire any substantial form of long-

term competitiveness. Based on the fact that small- and medium-sized firms expanded the share of domestic weaving production facilities, while MNCs did not, I conclude that the weaving industry did not improve its technology sufficiently to be competitive over the long-run. Table 4-9 summarizes the technological development of each type of firm compared with the 1970s (Table 3-12).

Table 4-9 Technological Development of Each type of Firm and Product in the 1980-90s

	Large		Small
	Standardized	High value-added	Standardized
Production technology			
Machine	Unchanged	Unchanged	Domestic
Skill	Unchanged	Unchanged	Domestic
Sales technology	Unchanged	---	Domestic

In the 1980s, the technological levels required in the international clothing market declined not because of lowered standards of quality but because Thai wage levels remained low, especially when compared to the rise in wages in South Korea and Taiwan. Therefore, even if Thai weaving technology did not advance, Thai woven products were consumed by clothing exporters.

However, this delay in technological development simultaneously resulted in increases in imports of standard products which were already produced in Thailand, because there was an increased need for high quality fabrics among clothing exporters

(4.1). According to Table 4-10, the imports of staple fiber (SF) fabrics had been increasing even when domestic weaving had a problem of oversupply in the first half of the 1980s. Especially, increases in imports of SF fabrics mixed with cotton, including P/C fabrics, evidence that competitive improvements in the Thai weaving sector were delayed. Therefore, the reason for the increase in imports of standard products can be attributed to a shortage of goods produced by advanced technologies.

Table 4-10 Changes of Import Components of Man-made Fabrics, 1980-92
First row: Mil.sqy, Mil. Bahts
Second row: growth rate, %

	SF fabrics				Filament fabrics	
	SF total		mixed with cotton			
	Volume	Value	Volume	Value	Volume	Value
1980	14.1	183.0	10.8	138.0	112.2	1,432.0
1984	34.6	780.7	26.8	598.7	80.2	1,400.7
	(145.4)	(326.6)	(129.6)	(333.8)	(-26.7)	(-2.2)
1988	127.9	1,708.6	52.5	815.6	108.5	1,837.5
	(269.7)	(118.6)	(95.9)	(36.2)	(35.3)	(31.2)
1990	158.4	2,651.3	76.8	1,080.0	160.7	3,333.0
1992	235.0	4,163.4	83.5	1,544.5	179.4	11,692.0
	(83.7)	(143.7)	(59.5)	(89.4)	(65.3)	(536.3)

* SF: staple fiber

Source: Foreign Trade Statistics, 1980,1984,1988,1990, and 1992.

4.3 Lack of diversification

The second problem of the Thai textile industry is that it has not sufficiently diversified its products to meet the domestic

demand from clothing manufacturers. Diversification is defined as textile firms adopting production strategies that are based on producing various kinds of high value-added goods rather than concentrating on a few kinds of standard products manufactured on economies of scale. Diversified production requires more production skill than mass production systems.

Table 4-11 Components of Export Fabrics in 1990

Export goods	1990	
	Amount	Value
P/C	41.3	50.0
- P/C unbleached/bleached plain	24.9	23.8
- other P/C plain	10.4	20.7
Polyester staple fiber	23.0	29.1
- bleached/unbleached	1.2	1.8
P/R	8.3	17.7
Filament	8.0	12.4
Man-made fabrics	100.0	100.0

Source: Thai Foreign Trade Statistics, 1990

Table 4-12 Nature of Business in Large-sized Firms in the 1990s

(Number,could be plural)

Cotton	P/C	Spun Rayon (P/R)	Polyester	Nylon	Total
38	27	13	7	2	72
(52.8%)	(37.5%)	(18.1%)	(9.7%)	(2.8%)	(100.0%)

Source: Thai Garment Manufacturing Association, 1992.

Table 4-13 Nature of Business of TWIA Firms in the 1990s

(Number, could be plural)

	Grey	Sarongs	Yarn dyed	Cotton net	Dyed	Other	Total
TWIA	111	25	51	34	8	23	230
	(48.3%)	(10.9%)	(22.2)	(14.8)	(3.5%)	(10.0%)	(100.0%)

Other mainly includes standardized fabrics, such as shirting.

Source: Thai Garment Manufacturing Association, 1992.

Since filament and its dyed weaving have held the largest share in Thai textile imports (Table 4-6), discussion concentrates on these two types of weaving. Table 4-11 shows the components of export fabrics in 1990. The share of bleached or unbleached P/C fabrics is still high. Judging that almost all exporting firms are large-sized, those firms which had relatively advanced technologies did not diversify their products. Based on my interview with a local large-sized textile firm, its main product is still occupied by grey fabrics as of 1994 (interview #18). Many domestic producers concentrated on manufacturing standard polyester staple fiber products. Table 4-12 shows the nature of business of large-sized weaving firms in 1992. Share of standardized products is far higher than that of filament weaving. Table 4-13 shows the nature of businesses of small- and medium-sized weaving firms. The major products of small and medium- sized firms are also standardized fabrics.

The technology for producing polyester filament yarn has not been developed in Thailand. Only a few MNCs produce various kinds

of filament yarns, while most firms concentrate on production of POY (partially oriented yarn)[62]. As for the dyeing sector, capacity in Thailand is unable to meet demand. Table 4-14 compares the amount of production of dyeing fabrics in the 1980s. The domestic dyeing industry did not develop from 1983 to 1988. As a result by 1988, dyed filament weaving production could not meet the domestic demand. Large-sized integrated firms have their own advanced dyeing facilities, but they are used only for their products, which are standardized ones. Among members of TTMA, nineteen firms had dyeing facilities, but only 5 firms had filament dyeing facilities in 1990.

Table 4-14 Comparison of Dyeing, Printing and Finishing Fabrics Between Import and Domestic Production, 1979-88 (Mil.sqy)

	1979 Production	1983 Production	1988 Production	1988 Import	M/X
C, P/C	786.0	1,146.0	1,200.0	56.2	0.05
Filament	28.8	180.0	192.0	64.5	33.6

Source: Japanese Chamber of Commerce, 1994
Foreign Trade Statistics, 1988.

The reasons why diversification of textile products did not develop in the weaving sector are attributable to three factors. First, demand in the domestic market did not match that in the international market. The domestic market has not had much demand

62 JICA, 1989.

for filament fabrics (interview #11). Because of the warm climate, Thai people have favored spun fabrics, which are washable and comfortable to wear in hot weather. Moreover, people in lower income brackets did not favor as people in industrialized countries filament products which were higher priced than spun woven ones. On the other hand, consumers in industrialized countries purchased various kinds of goods including high value-added goods. Second, Thai textile firms did not have sufficient production skills. It is difficult to master the technology of needed to produce filament fabrics. According to one MNC interviewed, "It took three years to produce high quality filament fabrics since I came here. (interview #19)" To produce filament products, preparation for this knowhow requires the proper machinery, vast amounts of yarn, and specific production skills. Production of filament requires the development of technology at all stages, such as

> "the development of filament yarn for WJL weaving by fiber producers, the development of warping system or warp sizing system by weaving plants, the development of special sizing, inspection of uneven dyeability at the beginning of weaving, and the incorporation of the weight reduction process by dyeing plants." (JICA, 1989)

The Dyeing sector can be also pointed out the shortage of production skills

> "...in the dyeing sector improvements in production management were more important than improvements in the production facilities themselves." Because "Product development in the textile and apparel industries requires not only improvement of existing production facilities but also accumulation of know-how in the dyeing and finishing processes such as "feel" and

"touch.(JICA, 1989: I-118)"

Third, financial problems related to the introduction of new machinery needs to be noted. One key reason why firms did not introduce modern machinery was the expense[63]. Both the appreciation of the yen and high price on textile machines made it difficult for firms to purchase new equipment, although modern machines increase productivity[64].

As for dyeing facilities, there was little movement to expand and/or renew equipment until the beginning of the 1990s, primary because of government policies.

> Due to the poor quality of domestically produced dyes, dyers are forced to use imported dyes. However, import tariffs and surcharges increase the cost by an additional 50% or so... Because the products are standard fabric, orders come from Sam Peng. This means that even though products might ultimately be exported, dyes do not receive export certificates because their products are exported indirectly. Dyers have a surplus in equipment capacity (JICA, 1989).

Finally, because fluctuating costs account for between 60-70% of total costs, fixed costs have to be kept down as much as possible[65].

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63 JICA, 1989.

64 JICA, 1989.

65 JICA, 1989.

4.4 Effect of FDI on industrial competitiveness

FDI was not the main contributor to the technological development in this period. Compared to 1979 as shown in Table 3-7, the share of weaving production facilities by FDI has been further reduced compared to the 1970s: share of FDI's spun fabrics declined to 12.9% in 1994 from 18.7% in 1979[66]. Table 4-15 illustrates production expansion of six large-sized Japanese weaving MNCs[67]. Japanese MNCs' growth rate of production is largely exceeded by that of local firms. Small- and medium-sized firms, which expanded production, were not related to MNCs; small- and medium-sized firms did not contract with any MNCs (Chapter 3).

Table 4-15 Production Change of Japanese MNCs from 1979 to 1992 (Mil.sqy)

	1979	1992	Growth rate(%)
Japanese MNCs	225.6	255.6	13.3
Total weaving firms	1,424.1	3,360.6	136.0

Source: Japanese Chamber of Commerce, List of Japanese multinational companies, (Nikkei kigyo Meibo) 1979 and 1992.

FDI did not play key role in diversification either. The amount of production of high value-added goods which were produced

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66 Japanese Chamber of Commerce, 1994.

67 This table shows transition of seven of eleven large-sized cotton and man-made weaving firms which were established in the 1960-70s and of which Japanese MNCs still mainly participate in management in 1990.

by MNCs was not adequate to meet the needs of clothing exporters. Although some of MNCs could improve their products by starting to produce high-value added goods, it was only one type of contribution that could be made. Regarding textile goods, where the transfer of production technology occurred depended on the global strategy of the headquarters of the multinational company. For example, Teijin headquarters in Japan withdrew their management from weaving production in all of their subsidiaries worldwide during the early 1980s, thereby stopping the transfer of advanced T/R and filament weaving technology.

4.5 Industrial linkage and FDI

Based on the fact that the domestic textile industry did not achieve the competitiveness needed to supply sufficient input materials for the Thai clothing industry, the Thai clothing industry has not developed the industrial linkage with textile sector to be competitive in a long run. The reason for the incoherence among these sectors is evident in the institutional structure of the Thai textile industry, which historically has lacked linkage between its clothing and textile sectors. There are few industrial linkages between these two sectors in Thailand; local business groups have created several linkages. Saha Union and Sukree weaving firms deliver their products to their clothing

factories[68]. However, there is no other linkage between fabrics and clothing manufacturers in Thailand, whether the companies are MNCs, or small- and medium-sized Thai firms. Unlike the linked yarn and fabric producers, most MNCs have no direct connection with the clothing sector.

Table 4-16 shows the share of clothing firms which entered into joint venture with foreign textile MNCs, and firms belonging to local business groups and their total production facilities in 1994. Although some of the middle-sized firms belong to local business groups, 92.9 percent of clothing firms do not have a direct relationship with a textile firm.

Table 4-16 Share of Each Type of Clothing Firm in Production Facilities in 1994
upper row: number of sewing machine
lower row: percentage of total

Foreign textile MNCs	Local textile business group	Total
4,600	7,975	178,619
(2.6%)	(4.5%)	(100.0%)

Source: Japanese Chamber of Commerce, 1994.

These facts indicate that except for a few large, local business groups, none of the MNCs created industrial linkages between the textile and clothing sectors, nor is there strong linkage between the clothing and weaving sectors. Instead, the multinational textile firms export most of their products. Furthermore, in this period, some Japanese multinational companies

68 Suehiro, 1979.

started to enact global strategies and use their own intercompany linkages. At times, they imported yarns from their subsidiaries in other countries so that their strategies moved beyond the linkages of the Thai textile industry. For example, the Toray group has a global strategy to rationalize processes within a group. Luckytex purchases 570 ton of its staple fibers from the Toray branch in Malaysia, 350 ton of polyester filament from Toray Fibers Ltd. in Thailand, and 1.7 million square yard of grey fabrics to be dyed from the Toray factory in Indonesia (interview #14). Based on the fact that Luckytex exports 70% of its woven production, this firm concentrates on woven production for export rather than production of input materials for clothing exports (interview #14). Thai Garment Export, which belongs to the Toray-TAL group, import 80% of input materials through their global network (interview#17).

Table 4-17 Sales Route of Large-sized Textile Firms

(number of firms)

	Spinning		Weaving	
	FDI/JV	Local	FDI/JV	Local
Domestic sales				
- firm in their group	6	2	1	0
- San Pen	0	0	4	3
Export ratio	0	20-25%	3:40-45% 1: 20% 1: unknown	1:40% 1: 0% 1: unknown

Source: JICA, 1989.

MNCs also brought their products to San Pen market. Most of the fabrics and yarns are sold to garment manufacturers through San Pen and then exported; 70% of the products sold in San Pen are supplied to garment manufacturers. San Pen also serves as the key supply base for imported fabrics needed by garment manufacturers. Based on JICA surveys[69], save for one firm, transaction routes are fixed, and sales routes for domestic markets operate through San Pen (Table 4-17).

None of the textile firms JICA surveyed conducted direct transactions with garment manufacturers. Small- and medium-sized weaving firms have also delivered their products to San Pen since the 1960s[70]. Therefore, all MNCs and small- and medium-sized weaving firms producing for domestic market delivered their products to San Pen. However, San Pen did not analyze demand in the international market and did not have any information what kind of fabrics Thai clothing manufactures demanded[71]. Thus market-side demands of fabric for clothing did not reach the product development process of fabrics and yarns. In other words, clothing manufacturers never exchanged information with domestic weavers about demands in the international market, and domestic producers of woven goods continued to produce what the San Pen market would accept.

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69 JICA, 1989.

70 Japaneses Chamber of Commerce

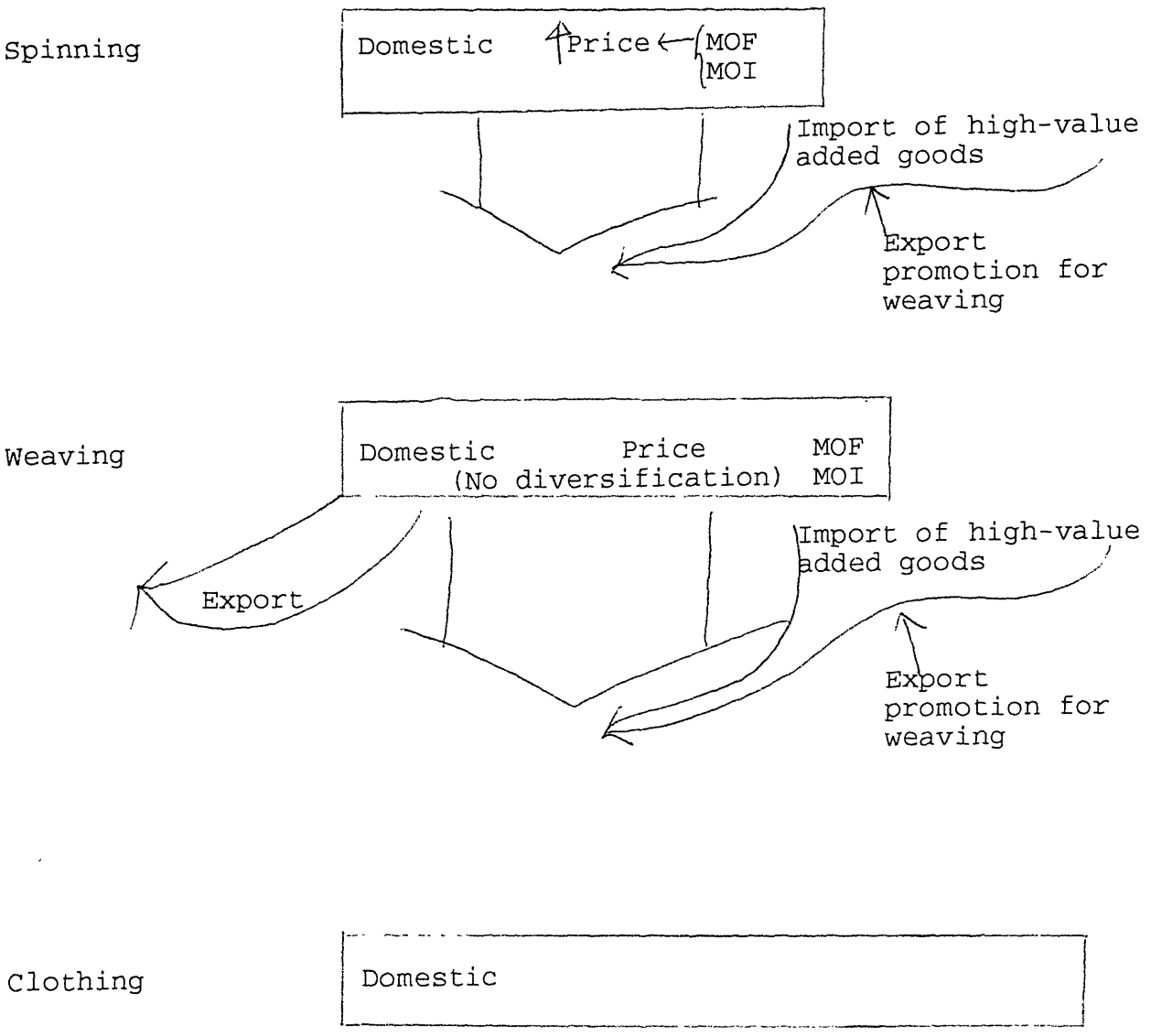
71 JICA, 1989.

4.6 Role of the government

In the 1980s, the effect of the government on improving industrial competitiveness of the Thai textile industry was limited. Despite of delay of technological development in especially local small- and medium-sized firms, the government did not implement policies to spread the advanced technology which MNCs already obtained in Thailand.

Moreover, the government was not concerned about shortage of industrial linkages between clothing and textile industries. Figure 4-1 shows the expected effect of government export promotion policies in the 1980s. There was incoherence among policies implemented by each ministry. The Ministry of Finance (MOF) protected the domestic market by imposing high tariffs. Simultaneously, MOI restricted the number of production facilities in the first half of the decade because of the problem of oversupply (chapter 3). These protections effected the cost competitiveness of Thai standardized textile goods. The standard count of spun yarns of pure cotton (100%), C.V.C., T/C or T/R was not cost-competitive internationally; even with tariff protections, imported goods from China were less expensive than Thai domestic goods; in the second half of 1987 the Thai market price for T/C 45'S was 54-57 Baht/lb compared to a tax inclusive

Figure 4-1 Negative Cycle of Government Policy in the 1980s



price of 51 Baht/1b for yarn imported from China[72].

On the other hand, the government, including BOI, directed its attention only toward export promotion, and exempted import tariffs on input materials for exporters. When clothing exports began to occupy a large share of domestic clothing production in the 1980s, tariff protection was not as effective as believed, see Table 4-18[73].

Table 4-18 Effective Rates of Assistance for the Textile and Clothing Industries in 1985 (%)

	All sales	Domestic sales	Export sales
Weaving	6.5	6.3	8.2
Clothing	-6.1	-9.8	5.0

Source: Suphachalasai, "Thailand's growth in textile exports," in New Silk Roads: East Asia and World Textile Markets, ed. by Anderson K., 1994.

As clothing exports increased, these incoherent government policies were not effective in promoting development of domestic textile industries. For clothing exporters which used high-value added fabrics, who obtained an exemption of import tariffs of their input materials, it was possible either to import fabrics or purchase them in the domestic market. For users of standardized fabrics, it might be more profitable to purchace less expensive Chinese goods. In other words, government policies did not promote

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72 JICA, 1989.

73 Suphachalasai, 1994.

linkage between the clothing and the weaving sectors. Until present, because of the low wage levels, the Thai textile industry remained competitive. However, with the extension of wage differences from Indonesia and China (Table 4-2), the Thai textile industry has been losing competitiveness based on those countries lower wage levels. Furthermore, considering that the long-term competitiveness of the weaving industry is doubtful, the import of weaving is expected to increase further in the future.

4.7 Conclusion

This section examined whether the textile and clothing sectors improved their long-term competitiveness during the 1980s. In this period, the textile industry did not produce sufficient high quality input materials to meet the needs of the clothing sector. This fact suggests that the Thai textile industry will lose competitiveness in the future as the level of its wage increases. The reasons were (1) the shortage of technological development such as the production skills necessary to create high value-added products, and the lack of modern machines which could produce standardized products, and (2) the lack of industrial linkage between the weaving and the clothing sectors.

Although MNCs had high industrial competitiveness, the role of FDI in industrial competitiveness of the weaving sector declined. The share of firms related to MNCs declined and MNCs did not create industrial linkage with clothing industry. Unlike in

the 1970s, the government did not play supplementary role; the government protection for domestic textile industry was not high; it did not spread MNC's advanced technology to local firms; it did not create the linkage between textile and clothing industries. Next section provides summarizes the analysis about the role of the FDI and the government in the development of the Thai textile industry, and suggests what the government should have done to connect high competitiveness of MNCs to the entire industrial development.

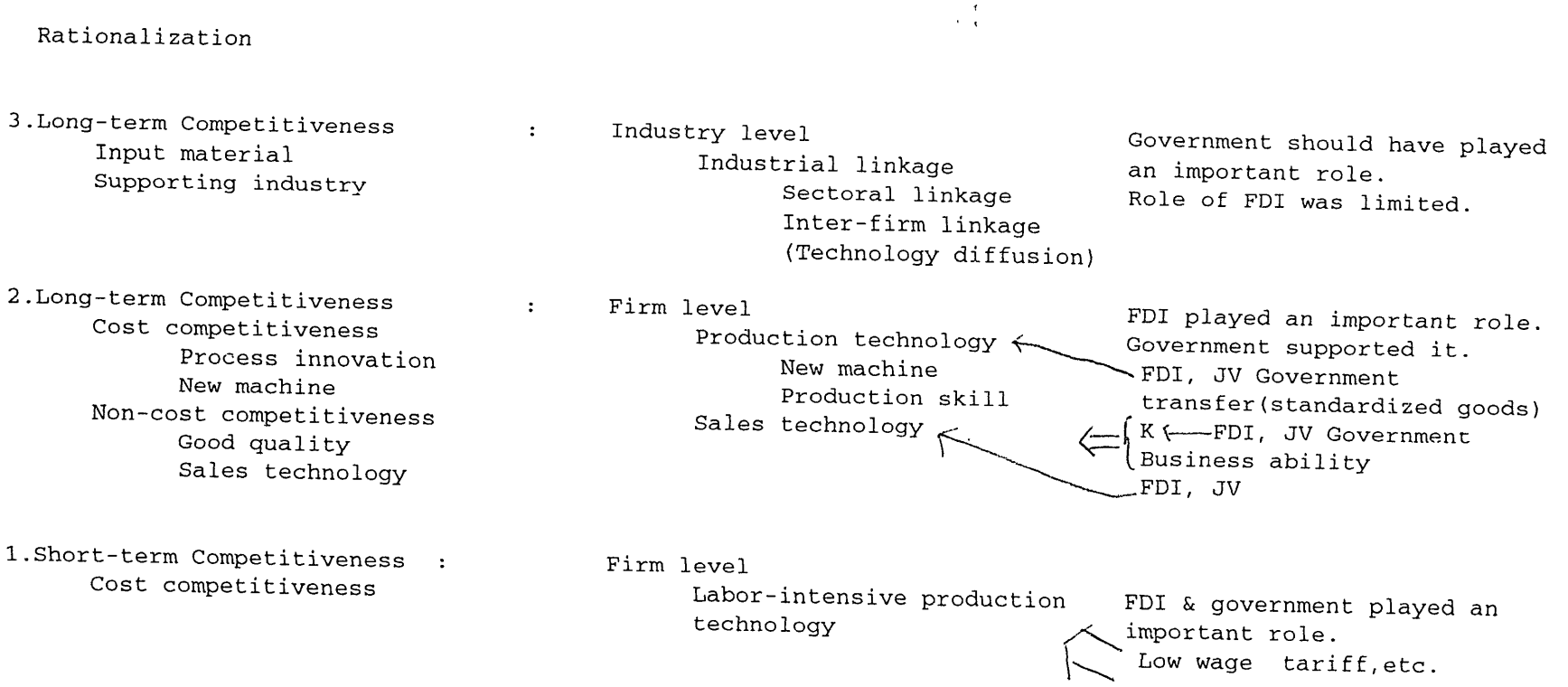
5. The Role of FDI and the Government

This chapter summarizes the effect of FDI and the government on technological development in the Thai textile industry. The previous chapters conclude that the government supported the role of FDI for the Thai textile industry to be competitive in the 1960-70s, while, in the 1980s, FDI's role was limited and the government did not implement policies to keep competitiveness in a long run. This chapter also discusses how the government should have supported the role of the FDI on improvement of "long-term" competitiveness in the Thai textile industry.

5.1 Development processes of the Thai textile industry

Figure 5-1 summarizes the development processes of the Thai textile industry. During the import substitution period of the 1960s, the industry obtained short-term competitiveness based on its low wage levels. Both FDI and the government actively promoted import substitution. In the fabric export expansion period of the 1970s, MNCs and large business groups acquired long-term competitiveness at the level of the firm. Production was concentrated on standard fabrics using lower count yarns produced in response to Thai domestic demand. The government supported large-sized firms to export these standardized goods. At that time, the Thai textile industry imported only what domestic

Figure 5-1 Development Process of the Thai Textile Industry



1. Import substitution period: 1960s-71
2. Weaving export expansion period: 1972-81
3. Clothing export expansion period: 1980s-90s

manufacturers did not produce. However, in the clothing export expansion period of the 1980s, to supply a variety of input materials needed to meet the new demand of clothing manufacturers, the Thai textile industry had to increase its ability to produce a diversity of high quality fabrics. Clothing manufacturers now needed to procure high quality fabrics because the criteria demanded by international markets which were higher than those of the Thai domestic market. However, although technological development was delayed during this period, even without advanced technology, the Thais were able to expand their production because of increases in low-priced clothing production. Consequently, in the 1980s, small- and medium-sized firms expanded their production, while most of the large-sized firms continued to produce standard products. The number of imported fabrics grew because of domestic shortages in a variety of high value-added fabrics and low quality goods continued to be produced by small- and medium-sized firms (chapter 4).

In the 1970s, the competitiveness of the Thai textile industry was determined by the technological levels of large-sized firms that were competitive. In the 1980s, production concentrated on standard goods, and only large-sized firms used advanced technology. However, as industry develops, production needs to expand and diversify, and ever more advanced technology is required to fuel this development. In the 1980s, firms needed either to adopt to technological development based on economies of scale rather than production skills or to incorporate development

based on sophisticated production skills rather than on mass production methods[74]. For the entire textile industry, to remain competitive it was important to understand how the industry produced a large number and a variety of products. This factor also led related industries, such as the clothing sector, to be competitive in the long run by constantly providing competitive input materials. Therefore, for the Thai textile industry to be competitive in the 1980s, all Thai textile firms, not only large-sized ones, should have introduced up-to-date machines and mastered production skills. Furthermore, at this stage, firms needed to know what kinds of goods the market demanded. Under conditions of severe competition in the international market, knowledge of market situations is vital to reduce the risk of investment. Therefore, the Thai textile industry should have linked itself to the Thai clothing industry so that they would have known what kinds of goods the domestic clothing manufacturers needed. The next section summarizes the role of the Thai government and FDI in the industrial development of Thai textiles.

5.2 The role of FDI and the Thai government in long-term competitiveness: at the firm level

FDI and the government played key roles in industrial development in the 1970s, because both promoted technological development of large-sized firms. Based on the previous

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[74] See Chapter 1

discussion, I analyzed the role of FDI and the government in the 1970s as follows. Figure 5-1 also shows the factors which brought technological development to Thai textile MNCs and large-sized local firms in the 1970s. Within multinational firms and local large-sized firms which contracted joint ventures with MNCs, initially, MNCs supported all aspects of technological development by providing advanced machinery, investment capital and high quality human resources. Within local large-sized firms which foreign trading companies were stakeholders, these trading companies supported capital accumulation and development of sales technology. The government supported capital accumulation in all types of large-sized firms, including local large-sized firms which foreign firms did not participate, by advocating export promotion policies and protecting domestic market. The government also promoted localization of human resources by restricting foreign workers' visas (chapter 2). Table 5-1 shows the number of Japanese and Thai workers in Japanese MNCs and local large-sized firms that had entered into joint ventures with Japanese firms. Technology transfer in MNCs has begun to proceed.

The difference between MNCs and large-sized local firms is that while MNCs plan their competitive strategies based on the MNC's business abilities, local firms in joint ventures do so based on the business abilities of local firms. Large-sized local firms had their own style of doing business. Therefore, FDI replaced Thai business abilities in FDI-run firms, but business procedures were determined by Thai business approaches by firms

that entered into joint ventures.

Table 5-1 Number of Japanese and Thai Managers & Workers in BOI Promoted Firms

First row: 1978
Second row:1990

Joint Venture	J.Managers	J. Factory	Thais managers	Total Thais
7	24	23	26	7,152
	20	7	44	7,523
Foreign Direct Investment				
10	52	108	36	10,693
	54	67	45	27,455

* Include Hong Kong workers

Source: Japanese Chamber of Commerce

On the other hand, FDI and the government were not the main contributors to expansion of production in the 1980s. In this period, the technological development of both large-sized and small-sized firms was important for the textile industry to remain competitive, because the production of small- and medium-sized firms was also expanding. The expansion in production by small- and medium-sized weaving firms was not related to FDI. Judging from the analysis in chapter 4, their expansion of production resulted, instead, from production expansion in the clothing sector rather than their ability to develop technologically. As such, it is doubtful whether small- and medium-sized weaving firms could achieve long-term competitiveness.

Moreover, diversification of textile products also became a

key factor affecting competitiveness of the Thai textile industry. However, FDI did not necessarily play a major role in advanced technology transfers, which were used for the production of high value-added goods (Chapter 4). Local business groups which already broke contract joint ventures did not obtain advanced technology from MNCs, and these local firms have not even started to produce high value-added goods (chapter 4).

The government did not implement policies to promote technological development of firms with less advanced technologies or spread advanced technologies of MNCs.

5.3 The role of FDI in long-term competitiveness:industrial linkage

The effect of FDI in creating competitive industrial linkage differed between the 1970s and the 1980s. In the 1970s, MNCs created a number of linkages within the Thai textile industry. Most MNCs controlled the entire manufacturing process, including fiber, spinning, weaving and dyeing; and, their products were also delivered to other company groups (chapter 3). Based on this inter-firm linkage, MNCs provided raw materials for fabrics, such as staple fiber, to local large-sized firms. However, industrial linkage within the Thai textile sector was created among only large-sized firms which had adequate financial resources and entrepreneurship to create this linkage. As for small-sized firms, their industrial structure was partially effected in response to conditions at San Pen. Small-sized spinning firms produced yarn and

fabrics without understanding what kinds of goods and demands the domestic market demanded. In this period, small- and medium-sized firms reduced their production because they lost to large-sized firms (chapter 3).

In the 1980s, the Thai textile industry needed to expand its industrial linkage to obtain long-term competitiveness, in particular the linkages between the textile and clothing sectors, and to further join small- and medium-sized firms to these networks. However, FDI did not promote increased industrial linkage. In this period, some Japanese MNCs started to enact global strategies and use their own intercompany linkages, such as Toray. Their stragtegies moved beyond the linkages of the Thai textile industry (Chapter 4).

FDI did not affect the industrial linkage of small- and medium-sized weaving firms and clothing manufacturers. Moreover, small- and medium-sized firms did not even obtain information concerning what clothing manufactures demanded.

5.4 The role of the government: at the level of industrial structure

Based on the analyses in the previous sections, FDI did not have effect of promoting technological development for the entire textile industry in Thailand: the effect of FDI on technological development was limited to MNCs and local firms which contracted joint ventures or technological cooperation with them. As a result, with increases in the level of wage, other Thai textile

firms have had problems of upgrading its quality and diversifying products. For the entire Thai textile industry to be competitive in the long run, government support is necessary.

Therefore, the role of the government at the level of industrial structure is to spread the advanced technology which MNCs already obtained in Thailand to the entire textile industry. In the 1980s, the government did not implement policies to address these problems. To improve industrial competitiveness, what kind of policy should the government have implemented?

First, the government should have upgraded product quality. Based on the fact that the international market requires higher quality than the Thai market, the government should have established an inspection system. Particularly, increases in wages will require higher quality, such as no defect in weaving and color fastness. As for small- and medium-sized firms, direct assistance was necessary. Based on the analyses in previous chapters, small- and medium-sized firms lacked all aspects of technology, such as production technology and sales technology. These firms also lacked financial resources to purchase new, efficient machines (Chapter 3).

As for diversification, the government should have recognized the differences between the international market and the domestic market not only in terms of quality but also in terms of diversification: In Thailand, polyester filament yarn has not developed markedly from the 1960s to the 1980s, because there were little demand for it in the domestic market (chapter 4), while

filament materials are very popular in the international market. On the other hand, the government has promoted export clothing firms regardless of what kind of weaving materials these clothing firms use. As a result, filament fabrics has held a large share of total import of fabrics. If the government had also promoted technological development of filament firms when it promoted clothing of high value-added goods, the import of filament would have been lower. Moreover, the government should also rethink its policy simply limiting working visas for foreigners. Difficulty to master advanced technology differs depending on type of products. Compared to grey fabrics, production skill of filament is more difficult and takes more time to localize (chapter 4). Thus, the government needs to reconsider how to localize more advanced production technology.

To grapple with these differences in quality and variety between the domestic and the international markets, two perspectives for industrial structure are important. First, the government should have considered creation of industrial linkages between the weaving and clothing industries. Industrial linkage may also assist a firm's decision-making concerning production expansion and diversification. For example, even when textile and clothing exports expanded in the middle of 1980s, Thai textile firms hesitated to expand production because of uncertainty about demand[75]. If textile manufacturers could exchange information with

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75 Yoshioka, 1987, and Mitsubishi Trading Companies, 1988.

clothing manufacturers regarding industrial linkage, their uncertainty would be reduced. Since only industrial linkages which FDI created is not sufficient to compete in the international market, government support is necessary.

Second, the government should also have considered whether to create technological diffusion routes. Since small and medium-sized firms do not have production and sales technologies, capital accumulation and business abilities, it is difficult to support all of these factors only by government organization, such as TID.

> "Small and medium scale companies, which cannot engage in research and development and build up technical knowhow by themselves, ask the TID for guidance and resolution of their problems. However, it may be difficult for TID to establish some technical knowhow which requires experiments and equipment on the same scale as actual production." (JICA, 1989: I-99)

If firms that have achieved advanced technologies would support some of these factors by creating technological diffusion routes, less developed firms would be able to master the technical knowhow more efficiently. In textile competitive countries, several industrial structures which promote industrial linkage or technological diffusion have been successful. For instance, the Japanese textile industry achieved a comparative advantage in manufacturing high quality goods through certain technological diffusion routes. Large-sized textile fiber firms subcontract with small weaving firms to provide them with designs to produce high quality stylized goods. Large-sized firms also invest in and provide their weavers with advanced textile machines. As a result,

the Japanese textile industry has the advantage of having achieved a flexible production system through its linked subcontracting system, even though small-sized Japanese firms have little business ability, design ability, or capital accumulation[76]. Rather their production and sales technologies are supported by large-sized firms. Even if small weaving firms have not been able to acquire these factors necessary for long-term competitiveness, they have been able to survive over the long run. These small-sized firms, using their weaving skills, have been able to create high value-added, quality fabrics. In a recessionary period, production is adjusted through trading companies and *sanmoto*.

Similarly but differently, Italian weavers are famous for their high design ability. In the Italian textile industry, small weavers have both weaving skill and design ability, and are used to flexible production schedules. The Italians design fabrics to produce high quality goods, and sell them to clothing firms. If one firm succeeds in selling its goods because of the quality of its design, other firms can receive, through a process of subcontracting, a part of the successful firm's order[77]. Consequently, small firms share the benefits of belonging to such groups. Although these small Italian firms do not have large amounts of capital, their cooperation reduces production risks; if one weaver's designs do not sell well, the other weavers will

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[76] Kokumin Kinyukoko, 1990.

[77] Fujii, 1994.

provide work for the ailing firm. Therefore, in both Japanese and Italian cases, small-sized firms received support of capital investment and business abilities by being a part of industrial oriented linkages. Japanese small-sized firms receive support of capital and business ability from their large-sized textile firms or Japanese trading companies. Italian firms tend to survive, based on their own business abilities, and shared financial risks.

This system also promotes industrial sector linkages. In the Japanese textile industry, trading companies, acting as middlemen for clothing and textile firms, have information about what kind of fabrics are in demanded by the clothing market. Information concerning clothing demand is relayed to large-sized textile fiber firms, which then place their orders with the small-sized weaving firms. Therefore, small-sized weaving and clothing firms work in tandem to create an efficient production system that meets market demands.

In Thailand there is no industrial structure exists to diffuse market information and advanced technology. Large-sized firms do not spread their technology because they and small-sized firms belong to totally different industrial structures (Figure 3-5), in which there is no subcontracting system linking them.

As discussed in chapter 4, The government policies did not prompt industrial linkages in the 1980s. Textile industrial policies were incoherent, and promotion of the clothing industry was not related to technological development in the textile industry. For example, firms which produce staple fibers often

hold meetings and discuss how much they should produce (interview #16). As discussed previously, these firms usually have their own weaving factories and yarns they produce are distributed only to large-sized firms. However, since members of TSFA do not include statistics for imported fabrics, they have not expanded their production to meet the demand of the clothing manufacturers. The same problems can be seen in the dyeing and textile machinery industries. Although the Thai government imposed high tariffs on the import of textile machinery, competitiveness in the textile machinery industry is not strong, and the technological gap between Thai textile machine manufacturers and Japanese and European producers is extremely high. Therefore, even with tariff protection, the Thai textile machinery industry is not expected to catch up to those at the advanced international levels[78]. On the other hand, high tariffs on dyes and textile machines hindered textile manufacturers from purchasing advanced technology. To avoid these problems, the government should implement coherent industrial policies in terms of industrial linkage and determine which industries it will support.

5.5 Conclusion

This chapter discussed the role of FDI and government in the technological development of the Thai textile industry. Based on

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[78] JICA, 1989.

Figure 5-1, I conclude that the key role of FDI is limited to the effect of development at the level of the firm, while the role of the government is expected to encourage development for the entire industry as well as at the firm level.

6. Conclusion

Based on the analyses in previous chapters, this thesis concludes that the FDI did not replace the role of the government in the Thai textile industry. From the 1960s to the 1970s, the Thai textile industry developed by cooperating with MNCs and the government. Since MNCs also promoted other large-sized firms and created competitive industrial linkage, the FDI played key role on industrial development. During this period, development of large-sized firms was synonymous with the development of the Thai textile industry. The government supported this development by providing financial priviledges to large-sized firms. However, in the 1980s, when production expansion and diversification were necessary, the effect of FDI on the entire textile industry became limited. The government should devise an institutional system so that FDI's effect on technological development is maximized. A simple export promotion policy is not enough. Industrial policies which promote inter-firm and sector linkage was expected to promote competitiveness in the long run. However, the government did not implement any policies which would promote the industrial linkage and technological development of all of firms. Consequently, the Thai textile industry is prospected to lose its international competitiveness in the future.

In the beginning of the 1990s, the Thai government started to consider a policy for industrial linkage in the textile industry; the BOI has promoted "supporting industries", such as the dyeing

and printing sectors (Appendix 1). Whether the Thai textile industry can further develop its technology to be competitive over the long-run depends on both textile firms and the government.

Appendix 1 Thai Textile Industrial Policy

1. Import Substitution Period (1960-71)

(1) BOI investment promotion policy (1960-71)
- full exemption of import duties and business taxes on imports of new equipment and machinery
- exemption from income tax for a five-year period
- up to 33.33% exemption from import and business taxes on necessary raw materials for a five-year period
- elimination of restriction for foreigners about aquisition of real estate or remittance to home countries.

Conditions:
- must have not less than three thousand spindles of spinning frame, and fifty weaving looms
- machinery and equipment approved by the BOI must be used

1962-64, 1968-71: spinning and weaving of cotton yarn and cloth
1968-71 : spinning and weaving of man-made fibre

(2) Tariff protection (1962- present)

(3) Import quota (1957-68)
1957-68 : cotton yarns and fabrics
- 1957: prohibited imports of cotton yarns of 0-26 count cotton grey shirting, and some finished forms of cotton grey cloth
  controlled imports of cotton yarn of 27-40 counts
- 1965 : controlled 40-46 counts

2. Weaving Export promotion period (1972- 1980) (See Figure 4)

1973: Oil crisis causes global economic recession
Due to the end of the Vietnam war, Thai textiles lose a large market, including Laos, Cambodia, and Vietnam.
The Thai textile industry has problems with oversupply
To eliminate oversupply problems in the domestic market, and promote exports.....

(1) BOI investment promotion
- condition: export not less than 65 - 100% of production

1973- :spinning, weaving, dyeing, printing and finishing
- new firm must use new machines to improve the quality of textile goods
- minimum investment of 10 million bahts.
- even non-promoted export firms were exempted from export duties and business taxes, and import duties, business tax and municipal taxes on raw materials (difference from BOI policy is only exemption of income tax)

(2) MOI control
1971. 10-
- to deal with oversupply problems and raise the technology level of the textile industry
- no control for garments
- factories cannot expand yarn and fabric productions for the domestic market
- producers are free to increase production for exports

(3) Bank of Thailand rediscounted facilities
- provided rediscount facilities to commercial banks at the rate of 5% for promissory notes for which commercial banks charge their customers 7%
- up to 90% of the export value, not exceeding 3 months

(4) Subsidies on Electricity costs
- reduction rate was 3.33%
- not so effective because ratio of this cost is small to total cost

3. Clothing Export promotion period (1981- present)

Government policy basically did not change. The government promoted exports from the textile and clothing sectors.

(1) Protection for domestic markets

Since there was still a problem of oversupply in the yarn and fabric sectors, the government protected domestic markets by setting high tariff rates to keep textile goods from declining drastically in price and quality; until 1987, the government continually restricted the number of weaving and spinning production facilities in the domestic market.

(2) Promotion of exports

Exemption of import tariffs on input materials for all textile and clothing manufacturers.

(3) Cancel the control of weaving and spinning machines effected in 1987
With increase in clothing export

(4) Present condition: factories must be located in zone 3 (not central areas)
As for, dyeing industry, there is no condition.

BOI promotion
1984- : Garment manufacturing is eligible for promotion with following conditions

- 100% export requirement
- Net foreign exchange must be at least 30% of total sales at all times.
- Machinery and parts must be new.
- No corpprate income tax exemption is given
- Documents indicating capability and expertise in seeking export markets must be submitted.

1986-: Yarn spinning, weaving and knitting industries are eligible for promotion with the following conditions:

- The minimum investment is 50 million baht.

Appendix 2 Classification

1. Foreign Direct Investment (FDI)

In this paper, FDI includes both multinational companies' direct investment and joint ventures which local Thai firms contract with foreign multinational companies.

2. Large-sized and Small- & Medium-sized firms

In Thailand, it is difficult to define large-, medium- and small-sized firms based on statistical data, because of shortage of accurate data. I classify large-sized firms as firms which are the member of the Thai Textile Manufacturing Association (TTMA), and small- and medium-sized firms as firms which are the member of the Thai Weaving Manufacturing Association (TWMA). In the Thai textile industry, most large-sized firms generally belonged to TTMA, while many small and medium sized firms belonged to TWMA (TWIA).

Appendix 3 Contents of Interview Survey

Board of Investment (BOI)

#1 Deputy Secretary General

#2 in charge of textile division at present

#3 in charge of textile division from 1987 to 1992

#4 in charge of investment of Japanese multinational companies

Questions

1. Objective of BOI
2. Contents and objective of each person's work
3. Outline of the BOI textile policies from the 1960s to present
4. Objectives of BOI textile policies
5. Future prospect for the Thai textile industry
6. Relationship with Ministry of Industry

Ministry of Industry

#5 Department of Industrial Promotion, Director General,
in charge of textile policy in the 1970s

#6 Senior Scientist, Textile Industry Division

#7 Senior Industrial Technical Officer, Textile Industry Division

Questions

1. Objective of MOI
2. Contents and objective of each person's work
3. Outline of the MOI textile policies from the 1960s to present
4. Objectives of MOI textile policies
5. Future prospect for the Thai textile industry

Textile firms

2 largest textile MNCs in Thailand: Teijin & Toray

Have all stage of production system

: fiber, spinning, weaving, and dyeing

FDI started in the 1960s (1st and 2nd FDI in Thailand)

A. Teijin

1967 Foreign Direct Investment (FDI) started (27.8 million baht capital)
P/R spinning, weaving and dyeing

1970 Production of staple fiber started

1971 Production of filament yarn started

early the 1980s withdrew from weaving and dyeing sectors

1990 Thai Namsiri (filament weaving and dyeing) started

1994 Production of spun bond fabric started

Products: 200 tons of spun bond fabrics, 6,500 tons of staple fiber, 2040 tons of filament yarn in 1994.

Divirsified, high value-added filament yarn

Capital: 319 million baht

Weaving and dyeing firm: Thai Namusiri (Polyester filament)

Majority of products heads for local textile mills.

#8 President (from 1995)

#9 Executive director, General manager for sales

#10 Manager, Textile Trade Department

#11 Senior associate, Fibers Strategy Department

#12 President (1991-93)

#13 ex-executive director

B. Luckytex

1960 Established (5 million Baht capital)

1961 Started production of spun woven fabrics, and dyeing.

1975 Toray Industries Inc. participated in the management.

1976 Started production of spun woven fabrics (heavy weight).

1983 Toray Industries Inc. gained majority of shares of the company.

1989 Stocks listed on Stock exchange of Thailand.

Started production of polyester filament woven fabrics (Taffeta for lining)

Modernization by introducing up-to-date looms, such as air jet and water jet looms.

1992 Established new dyeing factory for polyester filament woven fabrics.

Capital: 518.4 million baht in March, 1994.

Total assets: 4,183.8 million baht in March 1994.

Products: Spun Polyester, P/C, Cotton fabrics, Denim, and Polyester filament fabrics

Sales amount: 3,107 million baht (April,1993-March,1994)

Spinning, weaving and dyeing

Weaving export: 70% of production

Spun weaving:occupies 80% of EC quota, and 15-20% of US quota

Filament: 92% of US quota (EC has no quota)

#14 Director, Sales division

#15 Director, Mill manager

C. Toray Nylon Thai Co., Ltd.

1963 FDI started (30 million baht:Toray group total, Japan 100%)

spinning, weaving, and dyeing of P/R

1992 started polyester filament yarn

Capital: 12 million baht

Products: Polyester filament, Nylon filament, polyester POY (800ton)

Spinning, weaving, and dyeing firms

: Siam Synthetic (Nylon filament 1.2million yard/month, 5 mil.B capital)

Toray Textile (P/R fabrics, 40% export)

Thai Kurabo (P/C 2.5 million yard/month, 75 mil.B capital)

Luckytex

#16 President of Toray Nylon Thai (President of Thai Synthetic Fiber Association)

#17 ex-President in spinning, weaving, dyeing division (1977-79)

D. Thai textile large-sized firm

Established in 1975, have fiber, spinning, weaving and dyeing division

#18 President

E. Thai Namsiri Intex Co.,Ltd.

Established in 1990, have spinning and weaving divisions closely related to Teijin, most advanced machinery, such as rapier, and water jet looms

Products: 16 million yards of polyester filament fabrics

Shin-gosen fabrics (most high value-added material)

Capital : 200 million baht in 1994

#19 Executive Vice President

F. Thai textile medium-sized firm

Established in 1969, have spinning, weaving and dyeing divisions

#20 President

G. Thai textile medium-sized firm

Have spinning, weaving and dyeing divisions

Products: Yarn-dyed fabrics, Home textiles, Shirting and suiting fabrics

Rapier was introduced in 1990

#21 President, and head of The Thai Weaving Industry Association (TWIA)

Questions

1. History of company and the Thai textile industry
2. Kind of production falicities
3. Contents of production skills
4. Contents of production strategies
   - Type of products
   - Production process
   - Human resource management
   - Global strategies or not?
5. Sales strategies
   - domestic or export sales?
   - -US, EC, Japan, Asian countries, or Middle East

marketing channel: use trading companies or not?
future strategy: how to compete with China and Indonesia?

6. Future perspectives for your company
7. Future perspectives for the Thai textile industry
8. Suggestions or request to the government policy

Japanese Trading Company

#22 Mitsui &Co. (Thailand) Ltd, in charge of textile industry
#23 Mitsubishi Trading Company, in charge of textile industry

Questions

1. Difference between production technology among Japanese MNCs, local large-sized firms, and local small- and medium-sized firms
2. Quality of Thai textile products
3. Sales strategy: how to compete with China and Indonesia

Appendix 4 Thai Multinational Textile Firms

Founded	Name		Products
1961	Luckytex Co.Ltd.	J	P/C & C spinning, weaving & dyeing
1963	Thai Yazaki-Mahaguna Textile Co.Ltd.	J	P/C & C weaving Withdraw in 1978
1963	Thai Toray Textile Mills Co.Ltd.	J	P/R
1963	Tokai Dyeing	J	Dyeing
1964	Thai Blancket Industry	J	C spinning & weaving
1965	Thai Teijin Textile Ltd.	J	P/R
1966	Thai Tricott Co.Ltd.	J	Dyeing
1968	Teijin Polyester	J	Polyester
1968	Thai Kurabo Co.Ltd.	J	P/C weaving
1969	Thai American Textile Co.Ltd.	J	P/C, P/R spinning & weaving
1969	Siam Synthetic Textile Industry Ltd.	J	Filament
1970	Asia Fiber	T	Polyester
1970	Siam Dyeing & Printing Co.Ltd.	J	Dyeing & Printing
1971	Erawan Textile Co.Ltd.	J	P/C, C weaving
1971	Union Kanebo Spinning Mills Co.Ltd. (Union Spinning Mills)	J	P/C, C spinning & weaving (Withdraw)
1972	Thai Iryo Co.Ltd.	J	Garments
1972	Thai Melon Polyester	F	Polyester
1973	Union Olympus Co.Ltd. (Union Novelty Yarn)	J	Embroidery & crochet thread (Withdraw)
1974	Dusit Textile Co.Ltd.	J	P/C, C weaving

* C: Cotton, P/C: Polyester cotton, P/R: Polyester rayon
** J: Japanese, T: Taiwanese, F: French

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