

RENEWAL OF THE TEXTILE INDUSTRY IN DEVELOPED COUNTRIES AND WORLD TEXTILE TRADE

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I. *Renewal of the Textile Industry in Developed Countries*

The textile and clothing industry as well as other mature industries in developed countries have suffered from stagnant demand growth and the "catching-up" by developing countries in the last decade. Active response has recently been observed in some sections of the industry partly as a result of its long term adjustment to those difficulties since the 1970s and partly because of flexibility in its technology choice given the many stages of its production process. This observed industry response indicates that it is not properly regarded as an entirely declining industry. One form of active response is the technical progress which was introduced in various sections of the industry, resulting in productivity increases exceeding the average of all manufacturing, while another is the internationalization of its production and marketing strategy.¹

It may be a little exaggeration to call these responses "renewal" of the industry. The renewal of American textile industry was written up in business journals during the export boom of American textiles in 1979 and 1980.² The renewal of the American textile industry preceded President Reagan's Program for Economic Recovery and was characterized by the active response of big textile firms in investment in modern equipments and in export expansion. The renewal, however, is accompanied by the contrary movement by many inefficient firms of small and medium size which were driven out of the industry through severe competition and 130 thousand workers were fired during the years 1973-1980. A similar picture of active response by a group of firms on one hand, together with a large number of business failure and discharge from employment on the other has been observed in many EEC countries.

In Japan, Hokuriku district on the Japan Sea side of the main island enjoyed an export

* The author has benefited from comments and discussions on his report in the 39th Annual Meeting of Japan Economic Policy Association (May 29-30, 1982) and the 20th Rokko Conference (July 13-15, 1982).

¹ This paper is based on the *Report on European and American Textile and Clothing Industries*, the report of a MITI's study mission in October-November 1981. The report should be referred to for detailed information and statistics of individual countries. Analysis and policy discussion presented in this paper are the author's own, and do not reflect the position of the MITI.

² "World Business: American Textiles Loom Large," *Newsweek*, June 30th, 1980, "How US textiles got to be winner in the export game," *Fortune*, May 5th, 1980, and "American textile markets discovered the world," *Financial Times*, December, 1980.

boom in polyester filament fabrics and rushed investment in water jet looms and other shuttleless looms in 1980–1981, while the cotton spinners and weavers in Pacific side districts continued to suffer from competition with Asian NIC rivals. Again this occurrence is similar to the trend observed in textile industry renewal in other developed countries in an environment of overall stagnation and severe competition. The textile and clothing industry as a whole has been losing its shares in output and employment of total manufacturing in major developed countries (Table 1).

TABLE 1. DECREASING SHARES OF TEXTILE INDUSTRY
OF SELECTED DEVELOPED COUNTRIES (%)

| | US | | UK | | Germany | | Japan | |
|------------|------|------|------|------|---------|------|-------|------|
| | 1971 | 1980 | 1970 | 1980 | 1971 | 1980 | 1970 | 1980 |
| output | 7.9 | 6.3 | 7.6 | 5.0 | 6.9 | 4.6 | 8.9 | 5.7 |
| Employment | 12.5 | 11.1 | 12.6 | 11.2 | 10.0 | 7.4 | 15.0 | 12.7 |

Note: Shares of textile and clothing combined in total manufacturing.

Source: Individual country statistics.

The renewal of textile industry described above gives a different image from that of a typical declining industry described in textbooks of international economics. The latter is described as simply labor-intensive, having little possibility for technical progress, and losing competition entirely with developing country producers as soon as the labor-rich developing countries learn the technology. What will be the international trade in textiles and clothing if developed country producers revive through active technical progress and the internationalization strategy? Will a harmonious division of labor be achieved between developed and developing countries? Although the renewal gives a better prospect for structural adjustment in developed countries, it tends to affect unfavorably the textile exporters in developing countries. After analysing technical progress and trade expansion of textiles in developed countries in the following two sections, possible conflicts in trade interest will be pointed out and the need for adjustment efforts by both developed and developing countries will be emphasized in the last section.

II. *Technical Changes and Productivity Increase*

Technical change in the textile industry has been undertaken principally in developed countries so as to offset their decreasing competitiveness resulting from the increase in labor cost and the catching-up of their developing country rivals. It has taken two courses: one is in product differentiation and up-grading, while the other is in labor-saving, automation, and speeding-up of production processes.

The former course enables developed country producers to avoid direct competition with their developing country counterparts and to increase the unit value-added of their products. It is often said that an average adult woman in a developed country already has a sufficient stock of clothes in her drawer and that she buys new clothing not so much because of its cheap price as because of its new design and fashion. The invention of synthetic yarns with new properties (such as high twisted yarns and weight-reduced finish) and

the development of weaving and dyeing techniques to be applied to those new yarns are the most prominent achievements along this course. This has been the course eagerly taken by continental Europe and Japan with relatively big domestic demand for differentiated and upgraded textiles. Japanese producers invented silky thin fabrics of polyester filament and have gained sale increases both at home and abroad.

The other course i.e. the labor-saving, automation and speeding up of production processes, has reduced unit production cost in spite of increasing wages in developed countries. This has been most prominent in the US with its big domestic demand for standardized textiles. The doubling of operating speed of ring-frame machines, the introduction of open-end spinning machines and automatic transfer between individual operations in the spinning section, improvement and design changes of conventional shuttle-looms and invention of shuttleless looms (water-and air-jet looms and lepia looms) in the weaving section, as well as the speeding-up and computer control of pattern change in the knitting section are the most prominent examples of achievement along the second course. Such developments were made possible by the increasing availability of synthetic yarns of low cost and standardized quality.

In clothing production the automation and speeding-up of sewing operations have been promoted by means of computer-controlled designing, laser beam cutting, high-speed sewing machines, and special purpose sewing machines for operations such as buttonholing, patch pocket hemming and decorative stitching. An American trouser producer is now equipped with highly automated system producing 20 million pairs of trousers annually. For full automation of apparel production automatic transfer is still to be completed between 50 to 100 individual sewing operations.

The two courses are not mutually exclusive. Japanese manufacturers are inclined to adopt both course, so that automatic machines are introduced to the production of many varieties in small lot in order to meet the preference of Japanese consumers for differentiated products. The water-jet looms has so far been introduced to the production of standardized products in big lot but the lepia loom, another type of shuttle-less loom ready for frequent changes in size and design, is attracting more attention for future installation.³

Last year the Japanese MITI has started the program known as Flexible Manufacturing System (FMS) for full automatic clothing production. Labor input will be reduced to one-tenth and lead time, i.e. the time during which materials are prepared and finished clothing comes out, be shortened through computer-control of designing, cutting, patterning, and sewing. While it will contribute greatly to cost reduction if applied to big lot production of a fewer items it principally aims at establishing an efficient production system in small lot of many varieties so that the manufacturer can adjust quickly to rapid fashion changes and minimise the inventory stock of finished products.⁴

These technical changes have resulted in increase in labor productivity in both textile and clothing production often exceeding the manufacturing average of productivity increase

³ Toshio Kuroki, "Rushed introduction of jet looms and future prospect for fly-shuttle looms," *Kasen Geppo* (Chemical Fibers Monthly), October 1981.

⁴ 13 billion yen will be disbursed on the R & D of FMS over seven years. MITI invites publicly interested firms and forms a R & D team consisting of textile machinery maker, electronics manufacturer, clothing producer, and fiber producer. The achievement is attributed to the MITI and will be released to user firms under patent.

although the absolute level of the former is still lower than that of the latter (Table 2). Greater increase in labor productivity is associated with greater increase in capital-labor ratio in textile and clothing production.

TABLE 2. PRODUCTIVITY INCREASE IN THE TEXTILE INDUSTRY OF SELECTED COUNTRIES

| | Germany | UK | US | Japan |
|--|---------|------|------|-------|
| Value-added per employee (\$1,000,1977) | | | | |
| Textiles | 16.0 | 8.4 | 18.6 | 11.7 |
| Clothing | 14.2 | 6.0 | 14.5 | 8.8 |
| Total Manf. | 25.6 | 12.5 | 31.6 | 20.7 |
| Rate of Productivity increase (per annum, %) | | | | |
| Textiles | | | | |
| 1970-73 | 7.3 | 5.6 | 6.4 | 10.3 |
| 1973-80 | 4.8 | 0.9 | 1.5 | 5.1 |
| Clothing | | | | |
| 1970-73 | 1.7 | 5.6 | 4.2 | 4.7 |
| 1973-80 | 4.0 | 1.5 | 2.4 | 6.0 |
| Total Manf. | | | | |
| 1970-73 | 4.4 | 5.2 | 5.6 | 7.7 |
| 1973-80 | 3.1 | -0.5 | 1.9 | 4.3 |

Note: Growth rate of value-added output per employee at constant prices.

Source: Individual country statistics.

An OECD report recently pointed out that

"Data on physical capital per employee suggest that, at least in the industrial countries, the textile industry has by now reached the average capital intensity for manufacturing as a whole. The more rapid rise in the gross capital stock per employee in textiles than in manufacturing is the result not only of the fast decline in employment, but also of the

TABLE 3. PRODUCTIVITY AND CAPITAL INTENSITY OF MAJOR TEXTILE SECTIONS IN JAPAN

| | Fixed capital per employee (L/K) | | | Value-added per employee (Y/L) | | |
|---|----------------------------------|------|-----------|--------------------------------|------|-----------|
| | 1975 | 1980 | 1980/1975 | 1975 | 1980 | 1980/1975 |
| Total manufacturing | 3.75 | 6.75 | 1.80 | 2.64 | 3.62 | 1.37 |
| Total textile (20) | 2.24 | 4.03 | 1.80 | 1.34 | 1.84 | 1.37 |
| Cotton spinning (2021) | 1.50 | 3.56 | 2.37 | 2.23 | 2.64 | 1.18 |
| Cotton and staple fabric weaving (2041) | 1.99 | 4.35 | 2.18 | 1.05 | 1.57 | 1.47 |
| Filament fabric weaving (2042) | 2.02 | 4.02 | 1.99 | 0.96 | 1.43 | 1.49 |
| Hosiery knitting (2054) | 2.13 | 3.59 | 1.69 | 1.44 | 1.98 | 1.38 |
| Dyeing and finishing (206) | 3.35 | 4.77 | 1.42 | 1.63 | 2.38 | 1.46 |

Notes: Both Y/L and K/L are measured in million yen per person. Overtime changes of both of them are subject to price changes.

Source: MITI, Census of Manufactures.

fact that closures and scrapping were concentrated on the least capital-intensive parts of the industry. It is quite likely that the rise in the relative capital intensity of textile will continue as the old capital stock is replaced.”⁵

In Japan, however, both labor productivity and physical capital stock per employee in major textile segments are much smaller than the manufacturing average although the gap has tended to be reduced recently (Table 3). This is because the aggregate figures were predominated by a large number of small-sized firms with low capital intensity taking advantage of their family labor employment and small-lot production of non-import competing differentiated products. However, factor intensity will exceed that of manufacturing average if the figure for larger sized firms with high capital intensity replaces the aggregate one.

Table 4 compares technical and economic characteristics between conventional shuttle looms and water jet looms (one of newly invented shuttle-less looms) in the production of synthetic filament fabrics. The water jet loom is operated at triple speed and for 24 hours a day, producing 3.8 times as much output per machine and 4.7 times as much output per employee as ordinary shuttle looms which still dominate the number of weaving machines in Japan. Capital intensity of water jet looms is 4.1 times as high as ordinary shuttle looms (2.8 times as high as automatic ones). If the aggregate figures for labor productivity and capital intensity in Table 3 are magnified by these ratios to produce figures for the most advanced firm group, they will easily exceed that of manufacturing average. On the other-

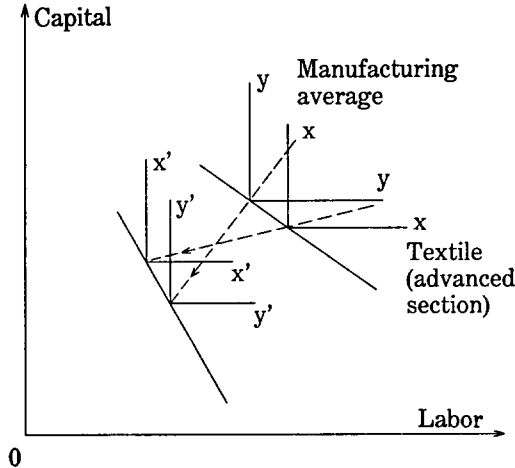
TABLE 4. CHARACTERISTICS OF SELECTED TYPES OF WEAVING LOOMS
(in production of synthetic filament fabrics)

| | Ordinary shuttle loom | Automatic shuttle loom | Water jet loom |
|--|------------------------------------|------------------------------------|-------------------------------------|
| (1) Price of machine (million yen) | 1.5 (in widths of 59 inches) | 2.0 (in widths of 59 inches) | 4.5 (in widths of 145 inches) |
| (2) Number of operator per machine (person) | 0.11 | 0.10 | 0.08 |
| (3) Number of working shift | 2 (16 hours) | 2 (16 hours) | 3 (24 hours) |
| (4) Working days per month | 25 | 25 | 25 |
| (5) Operation speed (rows per minute) | 160-170 | 160-170 | 400-600 |
| (6) Output per machine (million yen) | 1.8 | 1.8 | 6.8 |
| (7) Output per employee million yen) | 16.4 | 18.0 | 85.0 |
| (8) Capital stock per employee (million yen per person) | 13.6 | 20.0 | 56.2 |

Source: Shuttle Loom Study Group, "Future Prospect for Shuttle Looms," *Textile Fukui*, No. 30, July 1981.

⁵ OECD, *Structural Problems and Policies Relating to the OECD Textile and Clothing Industries*, July 1981, page 102.

FIG. 1 FACTOR INTENSITY REVERSAL IN THE TEXTILE INDUSTRY



Factor intensity ranking is reversed between the advanced section of textile industry and the manufacturing average as the result of more laboraugmenting technical progress in the former. Capital cost tends to supersede labor cost in total unit cost calculation as capital intensity increases and the competitive edge of developed country producers tends to be improved in spite of its higher labor cost per unit.

hand water jet looms are not fit for weaving in small lot of many varieties, thereby leaving some competitive edge for conventional shuttle loom weavers.

To sum up, textile production within individual countries presents a very wide range of capital intensities, which in turn creates a multitude of possibilities for competitive specialization in narrowly defined sections and processes. Fig. 1 illustrates the factor intensity reversal between an advanced section of textile production and the manufacturing average resulting from more rapid technical change in the former. This wide range of technical choice has enabled the textile industry to respond more flexibly than other mature industries such as metals and petro-chemicals.

How is international competitiveness affected by the increase in labor productivity and capital intensity? Will it not be eroded through technical transfer to developing countries? Manufacturers in developing countries are inclined to install automatic and capital intensive machines when they start production or expand their capacity. But the sophistication of products is less transferable to developing countries because successful up-grading requires close contact with the market and they do not have at home the "representative demand" for sophisticated products.⁶

Total unit cost of production is composed of material and capital cost as well as labor cost. The material cost tends to be equalised internationally unless heavily distorted by

⁶ The trade in differentiated textiles and clothing is fits best to the Linder's explanation of trade between countries of the same income level. B.S. Linder, *An Essay on Trade and Transformation*, 1961.

protection. Capital cost, on the otherhand, has tended to supersede labor cost as capital intensity increases and to improve the cost competitiveness of developed countries with low rental for capital so that the developed country producers could compete with their developing country rivals inspite of their high labor wages. A survey of Intrenational Textile Manufacturers Association reported recently that the cost difference of production using the same advanced spinning and weaving machines has recently decreased between developed and developing countries so as to be included within the difference in transportation cost.⁷ The competitive edge of developing country producers is rather preserved when they maintain old, after-redemption machines and incur only a minimum capital cost.

Technical changes in textile production had already started in response to increasing labor cost in develoed countries since the early 1960s and it has been greatly accelerated by the wider spread of synthetic textile fibers and development of electronics in the 1970s. Technical changes, however, have promoted the polarization of the whole textile firms into two groups, one is a group of big firms actively investing in modren capacity and expanding their production scale while the other is a big number of small firms with obsolete equipments and dropping out from severe competition. Both the US and UK observed active horizontal and vertical integration of firms throughout all stages of textile production and increasing concentration of their operations. In Germany, on the otherhand, rationalization effort had been undertaken independently by individual firms. In Japan, however, some middle and small firms as well as big firms are eager to install new machines for efficient production in small lots of a great variety.

III. *Internationalization of Textile Industry*

Although it is well known that the import demand ratio has increased since the early 1960s, it should also be noted that the export output ratio as well has increased in major industrial countries. (Table 5). The export output ratio has tended to exceed or be as high as the import demand ratio for textiles, whereas the former falls short of the latter for clothing. The small export output ratio for both textile and clothing of the US reflects the late start of US export expansion since early 1970s. Increasing export output ratios in Europe and the US should be contrasted with the declining trend for Japan throughout the 1970s.⁸ Increasing export output ratios have partly resulted from the developed country textile producers' efforts to make up for stagnant domestic sale with export expansion and partly reflected their stronger orientation for expanding sale beyond their national boundary by a group of firms with strengthened competitiveness.

In Western Europe it is accelerated by the completion of integrated market and the intensification of intra-regional trade. It is also assisted partly by the quota restriction to imports from developing countries under the Multi-Fiber Arrangement (MFA). The recent

⁷ International Textile Manufacturers' Association (ITMA), "International Comparison of Spinning and Weaving Cost for 1981," *Boseki Geppo*, February 1982.

⁸ Japanese export-output ratio increased by nine percentage points in the last two years reflecting the recent boom of polyester filament fabric exports. It is to be analysed yet whether the export boom ended the long run decline of export-output ratio. High import and export ratios partly reflect the inclusion of intra-EC trade in the case of UK and Germany.

TABLE 5. EXPORT AND IMPORT RATIOS IN SELECTED COUNTRIES

| | | Textile | | Apparel | |
|---------|------|---------------------------|-------------------------------|--------------------------|-------------------------------|
| | | Export/ Output/ (%) | Import/ Consumption (%) | Export/ Output (%) | Import/ Consumption (%) |
| US | 1971 | 5.6 | 9.7 | 1.0 | 9.3 |
| | 1975 | 10.0 | 8.5 | 1.9 | 13.7 |
| | 1979 | 12.3 | 6.4 | 3.1 | 16.5 |
| UK | 1970 | 20 | 14 | 11 | 12 |
| | 1974 | 25 | 22 | 11 | 20 |
| | 1979 | 29 | 33 | 18 | 30 |
| Germany | 1970 | 21.5 | 20.9 | 10.7 | 22.1 |
| | 1976 | 31.4 | 29.7 | 19.5 | 41.3 |
| | 1979 | 34.8 | 33.7 | 24.0 | 46.9 |
| Japan | 1970 | 30.0 | 4.3 | 7.8 | 1.1 |
| | 1976 | 31.8 | 11.0 | 2.3 | 5.8 |
| | 1979 | 24.5 | 18.0 | 2.1 | 9.2 |

Source: Individual country statistics. Refer to MITI's *Report on Textile Industry in Europe and the U.S.* for details.

expansion of the US exports is credited to US Commerce Department's "Textile-apparel export drive" as well as the cost reduction mentioned above and development of such new products as denim and corduroy. The US Apparel Council was established in 1979 to serve as a liaison between the federal government and the American clothing industry. It sponsors seminars and trade fairs and subsidizes small American manufactures to send samples and personnel abroad, and provides them with foreign market information. Although the similar activity has long implemented by governments in other developed countries, this is a departure from the US tradition of no governmental promotion of exports. The program should not be studied so much for its real promotion effect as for the change in attitude of US business and government toward export promotion.⁹

Tables 6 and 7 show trade matrices for textiles (SITC65) and clothing (SITC 84) among major countries and areas through the 1970s. The year 1976 is adopted as interim instead of 1975 because the 1975 figures are distorted by serious recession. Since trade figures at current prices are subject to inflation, the expansion of world total in the farthest right column and the bottom row should be referred to as an average rate of expansion and asterisks are attached to individual trade flows which expanded more than the world average.

It is important to understand correctly the share of trade flows based on wage difference in total world trade of textiles and clothing. In 1979 world total of textile trade (SITC 65) amounted to 50 billion US dollars and that of clothing trade (SITC 84) 35 billion dollars. Although the expansion of clothing trade decelerated from the annual rate of 19.5% for 1970-76 to 17.1% for 1976-79, that of textile trade was accelerated from 15.1% for 1970-76 to 16.2% for 1976-79.

Comparison of the figures in the farthest right column (total export of individual countries and regions) with corresponding figures in the bottom row (total imports) gives the net export or import position of individual countries or regions in trade of textiles and clothing.

⁹ "Textile-Apparel Export Drive Initiated," *Business America*, January 26, 1981.

In clothing trade only Southeast Asia (SEA) recorded a big export surplus vis-a-vis the net import on the industrial-country side. On the contrary in textile trade, all of Japan, US and EEC recorded net export surplus whereas SEA recorded export surplus of moderate size, which may give the impression different from that of an overwhelming predominance of wage-difference trade in textiles.

Detailed expansion of individual trade flows (envisioned by the scattering of asterisks among individual cells in Tables 6 and 7) will tell us that both export and import trade with and within the EEC and Other Western Europe (OWE) was most active while active import trade of EEC and OWE was matched by active export within the two areas. It is to be noted that US recorded a good export performance in textile as well as SEA, Latin America (LA), and the Rest of the World (ROW) which includes China and Taiwan. Japanese imports are still small relative to her domestic consumption but increased rapidly in both textiles and apparel.

Internationalization has also been active in imports of clothing. The export drive by developing countries is not the only spur to imports of clothing to developed countries. Clothing production requires not only semi-skilled labor for cutting and sewing but also skills and know-how in designing and marketing so as to adjust to changes in fashion and consumer taste. Clothing producers in developed countries plan the design of their products, procurement of fabrics and other materials, have them sewed and finished in low labor cost countries, and import finished products for sale at home.

A special tax incentive is given under the Tariff Act 807 in the US and the Value-added Tariffs in Germany to the use of home-made fabrics in the production of imported clothing, in other words, outward processing of clothing. The location of processing tends to be confined to low labor cost countries in the neighborhood in order to economise the two-way transportation cost of exporting fabrics and importing finished products. Outward processing trade by the US with Mexico and Caribbean countries and that by West Germany with East European countries (Yugoslavia, Czechoslovakia, Romania, and Hungary) have expanded through the 1970s so that it amounted to 8% of total clothing imports of the US and 16% of West Germany in 1978. The expansion of this trade is identified in world trade matrices of Tables 6 and 7 by the increase of fabric export from the US and clothing import from Latin America and that of similar trade between West Germany and Eastern Europe.

Skilled sewing labor and cheap fabrics of the Far East cannot be utilized in outward processing trade by the US and Germany because of the two-way transportation cost of the long distance. On the otherhand, if these merits of the Far East outweigh the incentive of the value-added tariff, outward processing trade is easily changed to the import trade of clothing made of foreign produced fabrics. It may well be called "planned imports" in order to distinguish the clothing imports at the importer's initiative from other forms of clothing imports. The change from outward processing to the planned import results in the loss of domestic employment not only for fabric production but also for cutting and other preparation for outward processing, which has tended to discourage clothing manufacturers to change to planned imports. For big retailers of clothing without any production and employment base at home, the merit of the planned import easily outweighs the incentive of the value-added tariff, which seems to be significantly reflected in the recent increase of clothing imports

TABLE 6. WORLD TRADE MATRIX OF TEXTILES (SITC 65)

| | | (in million US dollars) | | | | | | | | | | | |
|----------------------|---------------------------|-------------------------|-------|--------|--------|--------------|----------------------|---------------------------|----------------|-----------------|---------------|-------------------|-------------|
| Impotrer Exporter | | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. |
| | | Japan | USA | EEC | UK | West Germany | Other Western Europe | Other Developed Countries | Eastern Europe | South-east Asia | Latin America | Rest of the World | World Total |
| 1. | Japan | 1970 | 312 | 72 | 13 | 30 | 33 | 231 | 77 | 718 | 88 | 213 | 1744 |
| | | 1976 | 344 | 123 | 32 | 35 | 45 | 401 | 140 | 1105 | 156 | * 988 | 3302 |
| | | 1979 | 350 | * 233 | 85 | 102 | 46 | 368 | 170 | 1584 | 176 | 1074 | 4001 |
| 2. | USA | 1970 | 19 | 140 | 46 | 34 | 40 | 201 | 4 | 65 | 110 | 24 | 603 |
| | | 1976 | * 58 | * 576 | * 137 | 73 | * 119 | * 676 | * 23 | 84 | * 320 | * 114 | *1970 |
| | | 1979 | * 115 | * 1015 | * 321 | * 139 | 155 | 855 | 27 | * 167 | * 619 | * 229 | *3182 |
| 3. | EEC | 1970 | 88 | 398 | 3271 | 1055 | 955 | 330 | 229 | 106 | 103 | 454 | 5984 |
| | | 1976 | 171 | 375 | * 8197 | 2222 | 2190 | 532 | * 742 | 134 | 140 | *1180 | 13661 |
| | | 1979 | * 410 | *13811 | *1817 | *3591 | 663 | 999 | * 277 | 198 | 1710 | 22262 | |
| 4. | UK | 1970 | 34 | 70 | 250 | 51 | 224 | 173 | 41 | 44 | 31 | 85 | 952 |
| | | 1976 | 43 | 80 | * 637 | * 134 | 335 | 204 | 70 | 52 | 33 | * 223 | 1677 |
| | | 1979 | * 125 | * 134 | * 1268 | * 260 | 427 | 234 | * 123 | * 90 | 46 | 341 | *2788 |
| 5. | West Germany | 1970 | 13 | 732 | 48 | 342 | 90 | 90 | 51 | 23 | 31 | 74 | 1493 |
| | | 1976 | 24 | 66 | * 2064 | * 184 | * 930 | 130 | * 292 | 35 | 35 | * 273 | *3849 |
| | | 1979 | * 75 | 104 | 3231 | * 387 | *1566 | 144 | 392 | * 81 | 37 | 352 | 5982 |
| 6. | Other Western Europe | 1970 | 14 | 63 | 456 | 149 | 366 | 47 | 44 | 16 | 16 | 102 | 1124 |
| | | 1976 | * 41 | 71 | * 1333 | 324 | * 494 | 778 | 76 | 30 | 23 | * 328 | *2893 |
| | | 1979 | * 72 | 90 | * 2594 | * 625 | * 999 | 1017 | 101 | 259 | 41 | * 64 | *4795 |
| 7. | Other Developed Countries | 1970 | 3 | 53 | 35 | 22 | 10 | 38 | 2 | 7 | 12 | 23 | 183 |
| | | 1976 | 4 | 57 | 68 | 20 | 14 | * 95 | 1 | 15 | 20 | * 119 | 393 |
| | | 1979 | * 25 | 87 | * 175 | * 38 | * 28 | * 158 | * 4 | * 49 | 28 | 56 | 610 |
| 8. | Eastern Europe | 1970 | 2 | 8 | 76 | 14 | 33 | 57 | 22 | 253 | 17 | 10 | 92 |
| | | 1976 | * 6 | 19 | * 272 | * 35 | * 156 | 48 | 568 | 14 | * 42 | * 255 | *1380 |
| | | 1979 | * 13 | 51 | 373 | * 57 | 189 | 231 | 49 | 753 | 30 | 55 | 299 |
| 9. | Southeast Asia | 1970 | 50 | 271 | 221 | 123 | 42 | 133 | 123 | 335 | 36 | 217 | 1428 |
| | | 1976 | * 471 | 516 | * 835 | 281 | * 166 | * 382 | 189 | *1219 | 43 | * 795 | *4616 |
| | | 1979 | *1038 | 633 | * 1413 | 450 | * 449 | * 546 | 140 | *2263 | * 136 | *1548 | *8002 |
| 10. | Latin America | 1970 | 2 | 65 | 25 | 0 | 3 | 9 | 4 | 7 | 67 | 1 | 183 |
| | | 1976 | * 19 | * 163 | * 193 | * 9 | * 37 | * 42 | * 35 | 6 | * 199 | * 15 | * 709 |
| | | 1979 | 24 | 210 | * 320 | * 43 | * 57 | 46 | 45 | * 15 | * 371 | * 63 | 1151 |
| 11. | Rest of the World | 1970 | 15 | 14 | 109 | 19 | 27 | 27 | 117 | 150 | 23 | 152 | 634 |
| | | 1976 | * 118 | * 70 | * 484 | * 51 | 64 | * 69 | 273 | 353 | 41 | 324 | *1796 |
| | | 1979 | * 303 | * 140 | * 1200 | * 158 | * 171 | * 144 | 381 | * 729 | 45 | * 919 | *4032 |
| 12. | World Total | 1970 | 193 | 1184 | 4405 | 615 | 1428 | 1088 | 853 | 1421 | 465 | *1278 | 12420 |
| | | 1976 | * 888 | 1615 | *12081 | *1634 | *3549 | 2321 | *8184 | 2960 | 984 | *4118 | 30720 |
| | | 1979 | *2000 | 2164 | *21134 | *3594 | *6489 | 2930 | 2778 | *5155 | *1692 | 6455 | 49889 |

TABLE 7. WORLD TRADE MATRIX OF CLOTHING (SITC 84)

(in million US dollars)

| Importer Exporter | (in million US dollars) | | | | | | | | | | | |
|------------------------------|-------------------------|--------|--------|---------|-----------------|-----------------------------------|-------------------------------------|-------------------|--------------------|-------------------|-----------------------|-----------------|
| | 1. Japan | 2. USA | 3. EEC | 4. UK | 5. West Germany | 6. Other Western Europe Countries | 7. Other Developed Europe Countries | 8. Eastern Europe | 9. South-east Asia | 10. Latin America | 11. Rest of the world | 12. World Total |
| 1. Japan | 1970 | 275 | 27 | 5 | 18 | 5 | 34 | 37 | 35 | 8 | 41 | 462 |
| | 1976 | 218 | 39 | 12 | 21 | 9 | 30 | 33 | 22 | 5 | 60 | 416 |
| | 1979 | 165 | 44 | * 82 | * 42 | 12 | 20 | 16 | 29 | 4 | 64 | 351 |
| 2. USA | 1970 | 3 | 39 | 7 | 15 | 13 | 21 | 1 | 21 | 88 | 41 | 227 |
| | 1976 | * 18 | 83 | * 27 | * 34 | * 28 | * 68 | 2 | 20 | 258 | 84 | 561 |
| | 1979 | * 79 | * 224 | * 11 | * 81 | 72 | 72 | * 4 | 23 | 420 | 64 | * 958 |
| 3. EEC | 1970 | 20 | 1708 | 82 | 654 | 421 | 63 | 74 | 17 | 31 | 91 | 2655 |
| | 1976 | * 101 | 4787 | * 294 | 1634 | 1178 | 141 | 99 | 37 | 66 | * 349 | 7054 |
| | 1979 | * 272 | * 8621 | * 718 | 2696 | * 2326 | 143 | 126 | * 100 | 108 | * 673 | * 12806 |
| 4. UK | 1970 | 4 | 39 | 89 | 17 | 92 | 23 | 0 | 7 | 11 | 30 | 295 |
| | 1976 | 9 | 45 | * 328 | 52 | 182 | 48 | 0 | 9 | 57 | 62 | 740 |
| | 1979 | * 40 | * 831 | * 81 | * 144 | * 323 | 50 | 0 | * 24 | * 108 | * 142 | * 1594 |
| 5. West Germany | 1970 | 1 | 25 | 267 | 5 | 104 | 7 | 0 | 2 | 3 | 21 | 430 |
| | 1976 | 5 | 19 | * 910 | * 24 | * 413 | 14 | 0 | 3 | * 18 | 57 | * 1439 |
| | 1979 | * 11 | * 32 | * 1575 | * 115 | * 853 | 15 | 0 | 5 | * 38 | 80 | * 2609 |
| 6. Other Western Europe | 1970 | 3 | 61 | 217 | 78 | 216 | 10 | 55 | 2 | 3 | 33 | 600 |
| | 1976 | * 14 | * 890 | 162 | * 551 | 625 | 25 | * 242 | 6 | * 11 | 58 | * 1946 |
| | 1979 | * 26 | * 1778 | 312 | * 1225 | 966 | 26 | 243 | 7 | * 26 | 95 | * 3248 |
| 7. Other Developed Countries | 1970 | 3 | 81 | 23 | 3 | 11 | 9 | 1 | 4 | 4 | 5 | 141 |
| | 1976 | * 20 | * 93 | * 110 | * 12 | 24 | 28 | 1 | 4 | 4 | 0 | 283 |
| | 1979 | 16 | 105 | * 244 | 15 | * 42 | 35 | 1 | 4 | * 7 | 17 | 471 |
| 8. Eastern Europe | 1970 | 1 | 3 | 86 | 13 | 30 | 8 | 716 | 1 | 0 | 29 | 874 |
| | 1976 | 3 | * 52 | * 466 | 38 | 83 | 24 | 1248 | 2 | 3 | 78 | 1959 |
| | 1979 | 5 | * 116 | 770 | * 124 | 1063 | 44 | 1617 | 0 | 3 | 66 | 2754 |
| 9. Southeast Asia | 1970 | 82 | 571 | 285 | 128 | 64 | 78 | 22 | 47 | 12 | 69 | 1230 |
| | 1976 | * 568 | * 2598 | * 2100 | * 638 | * 548 | * 592 | 67 | 96 | * 109 | * 447 | * 7069 |
| | 1979 | * 1108 | 4085 | * 3523 | * 1138 | 583 | 595 | 109 | * 244 | * 264 | 701 | 11212 |
| 10. Latin America | 1970 | 0 | 26 | 7 | 4 | 9 | 1 | 1 | 0 | 30 | 1 | 75 |
| | 1976 | 2 | * 138 | * 92 | 6 | 16 | * 22 | 1 | 0 | * 120 | 0 | * 391 |
| | 1979 | * 5 | 203 | 144 | 13 | 20 | 12 | * 7 | 1 | * 253 | 1 | 644 |
| 11. Rest of the World | 1970 | 10 | 2 | 19 | 6 | 5 | 10 | 71 | 28 | 4 | 24 | 173 |
| | 1976 | 32 | * 25 | * 286 | 35 | * 27 | * 57 | * 312 | * 112 | 5 | * 213 | * 1069 |
| | 1979 | * 164 | * 152 | * 662 | * 125 | * 51 | 83 | 432 | * 310 | * 9 | * 403 | * 2266 |
| 12. World Total | 1970 | 122 | 1249 | 2411 | 310 | 774 | 234 | 978 | 155 | 180 | 334 | 6437 |
| | 1976 | * 758 | 3495 | * 8853 | * 1226 | 2482 | * 987 | 2005 | 299 | * 581 | * 1288 | 20748 |
| | 1979 | * 1675 | 5344 | * 16010 | * 2538 | * 4205 | 1030 | 2555 | * 718 | * 1094 | 2079 | 34710 |

Source: U.N., *Monthly Bulletin of Statistics*, June 1981 and E.E.C., *Commodity Trade*, 1980.

Notes: 1) All figures are based on export (fob) statistics.

2) Regional classification

3. EEC includes Denmark, Ireland and the UK through the 1970s.

6. *Other Western Europe* includes so-called "European NICs" (Greece, Turkey, Spain and Portugal).

7. *Other Developed Countries* consists mainly of Canada, Australia, New Zealand and South African Republic.

8. *Eastren Europe* includes U.S.S.R.

9. *Southeast Asia* includes Asian NICs except Taiwan.

11. *Rest of the World* includes both Taiwan and China as well as African and Mid-east countries.

3) Asterisks (*) indicate rate of increase greater than that of world total.

4) Figures for Rest of the World (11th row and column) are obtained as the difference between World Total (12) and the subtotal of the first ten regions (1-10).

5) Since European NICs (Spain, Portugal, Greece and Turkey) are included in OWE, the OWE's export to EEC partly reflects wage difference trade. In contrast to that of Asian NICs, export capacity of European NICs is limited so that OWE's trade pattern was hardly distorted by its inclusion of European NICs.

from the Far East to the US and EEC.¹⁰

In Japan, the transfer of textile production abroad started in the mid 1960s to Southeast Asia and Latin America. It typically took the form of joint venture investment by a Japanese manufacturer, a trading company and a local wholesaler. It originally aimed at the production for local consumption and later for export to other developed countries both substituting exports from Japan. The participation of Japanese trading companies in joint ventures helped the redirection of textile trade flow in the 1960s, while recently the management of joint venture has been localized in Asian NICs and the export of their products is now handled by local trading companies.

Overseas production for the purpose of importing to Japan started in the early 1970s and has increased only recently. The most eminent has been the processing trade with China, which is estimated to occupy almost a half of clothing import from China and around 5% of total clothing import of Japan. It has been promoted by big clothing retailers for their sale at home and fabrics are shipped from Japan mainly because they are not available over there. In contrast with the US and West Germany, no tariff incentive is given to outward processing trade in Japan so that a duty is imposed on the full amount of clothing import. The outward processing trade with China mainly results from un-availability of fabrics and other materials and it will readily change to the planned import trade whenever cheaper and qualified fabrics become available there.

As is shown in Tables 6 and 7, Japanese imports of textiles and clothing recorded a high rate of increase throughout the 1970s, reflecting the switch-over to cheaper supply sources by both consumers and retailers in the absence of quota restrictions. It is expected under the present import policy that imports will continue to increase in future to the extent that standardized textiles and clothing will be largely supplied by imports from developing countries while sophisticated fabrics and fashionable clothing will be mainly supplied by domestic producers.

¹⁰ Both the US and German governments have implemented additional restrictions to outward processing in order to discourage the dislocation of domestic production and employment. In Germany only apparel manufacturers are eligible for the tariff incentive and within 30% of their total apparel sale. In the US fabrics have to be cut ready for sewing before exporting and imports under 807 are also subject to the MFA quota.

IV. *Impact of World Trade in Textiles and Clothing*

The renewal of textile industry in developed countries tends to expand trade flows of textiles and clothing among developed countries, while decelerating wage difference trade from developing to developed countries. However, it basically reflects rational response to changes in factor cost and consumer taste in developed countries. Automation has responded increasing wages and changes in working condition while the sophistication of products helps to increase textile consumption which would otherwise be satulated in developed countries. Simultaneous expansion of export and import has resulted from the extension of revived entrepreneurship in textile business beyond national borders. The renewal itself is consistent with efficiency improvement in textile production over the world, but in reality it tends to discourage the export efforts by developing countries. We cannot deny their claim that they are frustrated because of their success and the renewal reflects selfish strategy change on developed country side. However, it should not be regarded as a deadlock conflict because it may be resolved by the removal of various policy distortions on both sides.

(1) The expansion of wage-difference trade has in effect been prevented by the import quota system under the Multi-fiber Arrangement (MFA). Despite the original commitment of MFA 1 (1974-77) that quota was to be expanded by 6% annually, the quota was severely implemented so as to restrict import increase within the demand growth of around 1% at home (so called "rational departure") under MFA 2(1978-81). If the quota restriction were strengthened under the present MFA 3 (1982-87), especially by EEC countries, it will further retard the wage-difference trade. Although the expansion of intra-developed country trade has been partly promoted at the cost of exports from developing countries under the MFA, it is based on product differentiation and changes in consumer's taste. The expansion of outward processing trade and planned imports has been restricted within the MFA quota and the conflict, so that textile businessmen will feel more restricted in their internationalization if the MFA 3 will be severely implemented.

Japan has participated in MFA as an exporting country since 1974 and has imposed no quota restriction to textile imports from developing countries, except for that on raw silk and silk fabrics imported from Korea and China. Imports of cotton yarn and fabrics have recently been subject to the administrative guidance by the MITI (i.e. the persuasion of member importers of the Textile Importer's Association to refrain from contracting additional imports based on frequent check of the contract statistics). Its effect, however, is dubious because they are continued to be imported by non-member importers. To give an example, the imports of cotton yarn during the first six months of 1982 was almost 90% more than that during the same period of the previous year, inspite of the MITI's intervention and has led the Cotton Spinner's Association to launch the anti-dumping appeal.

(2) Under adjustment assistance policy technical progress has resulted in surplus capacity in many developed countries. Governments provide adjustment assistance to firms and laborers of the textile industry either as a part of textile industry policy or more general forms of assistance ploicy to depressed areas, small and medium firms, research and develop-

ment activities and so on. In France and Italy direct assistance has been extended to ailing business. The UK government promoted eagerly the scrapping and modernization of textile industry equipments through the 1960s and 1970s, which, however, is being abolished under the present Thatcher administration. On the contrary West Germany and the US governments refrain from direct intervention in individual firms but limit their role to the provision of import restriction (MFA) and other indirect regulations.¹¹

Adjustment assistance was introduced in order to promote private firms' positive response to external shocks but it has been often criticized that it has rather tended to postpone the adjustment and to aggravate the adjustment difficulty.¹² The Japanese government has implemented various measures of domestic assistance to the industry in stead of import restriction. They consist of structural rationalization programs and the subsidized scrapping of excess capacity. Under the former programs preferential loan was provided to small and medium firms for the modernization of their equipments and for their joint efforts for new products and technology development.

The subsidized scrapping is based on equipment registration system, a unique feature of adjustment assistance in Japan. Under Smaller Industries Organization Law of 1958, Japanese textile manufacturers have been obliged to register all of their spinning, weaving, and dyeing machines and the building-up of new machines has been admitted only in exchange for the scrapping of old ones of equivalent capacity. Registration is transferable between firms and a firm purchases it from other firms at a market price if it wants to expand its capacity. The MITI has also taken a series of subsidized scrapping of excess capacity of small and medium firms.

Both measures have been introduced to eliminate surplus capacity and avoid excessive competition, but contrary to their original intention they have tended to discourage voluntary unsubsidized scrapping and to prolong the survival of inefficient firms. The boom of introducing water jet looms in the Hokuriku district in the past few years was only marginally subsidized by the government but mainly financed by the weaver's own loans. The district suffers from surplus capacity now and it is proposed to increase the conversion rate of modern looms for obsolete ones because the present conversion rate underestimates the production capacity of modern looms operated in three shifts. However, the stricter regulation will not help since the surplus capacity has resulted not so much from the low conversion rate as from prolonged survival of inefficient firms and easy investment decision by firms both under the equipment registration system.

It is essential for successful structural adjustment that a private firm decides at its own risk and profit whether to expand its capacity or to stop production and leave the industry. Theoretically speaking, any governmental assistance affects its decision based on the market mechanism. However, it is important in practice for the government to keep market competition working and to try to be neutral in its provision of assistance leaving the final decision to a private firm.

Japanese textile producers have been exposed to competitive pressure by the products

¹¹ In the US, Trade Adjustment Assistance has been given to firms and employees who apply for the injury resulting from imports expansion. Charles R. Frank, Jr., *Foreign Trade and Domestic Aid*, Brookings Institution, 1977.

¹² See Susan Strange and Roger Tooze eds., *The International Politics of Surplus Capacity*, George Allen & Unwin, 1981, for detailed discussion of the surplus capacity in European countries.

from developing countries firstly at their export market in other developed countries where no protection was available and later at their home market where import tariffs were reduced and no quota restriction was introduced. Structural changes in the Japanese textile industry observed over the last two decades are attributed not so much to the adjustment assistance by the government as to the continuance of competitive pressure.

(3) Technical progress gives a significant impact on employment problem in both developed and developing countries. The innovation of labor-saving and automation originally started in response to labor shortage and increasing labor cost in developed countries in the 1960s. Tables 8 gives an evidence of substantial reduction of labor employment in textile and clothing production, many workers having voluntarily left the industry and thus did not constitute unemployment, until the mid 1970s. Productivity improvement and the increase of profits and wages up to the level of other industries are themselves to be welcome so long as the displaced labor and capital are employed by growing industries.

TABLE 8. CHANGES IN EMPLOYMENT

(1,000 persons, %)

| | 1970 | 1975 | 1980 | 1975/70 (%) | 1980/75 (%) |
|----------|------|--------|------|----------------|----------------|
| Germany | | | | | |
| textiles | 497 | 357 | 304 | -28.2 | -17.4 |
| clothing | 385 | 292 | 249 | -24.2 | -17.3 |
| UK | | | | | |
| textiles | 678 | 537 | 384 | -20.8 | -28.5 |
| clothing | 360 | 326 | 228 | - 9.5 | -12.3 |
| US | | (1973) | | (1973/70) | (1980/73) |
| textiles | 907 | 980 | 850 | + 8.0 | -13.3 |
| clothing | 1319 | 1400 | 1314 | + 6.1 | - 6.1 |
| Japan | | | | | |
| textiles | 1264 | 996 | 817 | -21.2 | -18.0 |
| clothing | 413 | 530 | 536 | +28.3 | + 1.1 |

Source: Individual country statistics.

However, the absorption by growing industries is limited under the present stagnant growth in developed countries. Moreover under stagnant consumption growth, productivity increase is met by the displacement of labor, many of whom remain unemployed. The situation is most serious in areas where the industry have so far provided a main employment source. The textile's share in total employment will continue to decrease in major industrial countries.

Both slower increase in exports to developed countries and transfer of labor saving technology from developed countries will limit the labor absorption by the textile industry in developing countries. Unless they are offset by the growth of domestic consumption which will be discussed later, the textile's share in employment will also decrease in developing countries.

(4) It is important for economists and policy makers in developing countries to understand correctly the current situation of textile industry mentioned above. Many of them are still eager to expand textile and clothing exports to developed countries and undertake ambitious programs of capacity expansion. They blame the protection in developed countries for retarding their export expansion and demand the abolition of import restriction.

While the import restriction should be removed gradually, it is not likely for them to achieve their ambitious plan for export expansion. The recent slower growth of wage difference trade of textiles is not only due to the protection. It also has resulted from stagnant consumption of textiles in developed countries and strengthened competitiveness of their production due to technical progress and changes in taste.

Several reliable forecast for textile demand agreed on less than 1-3% increase in consumption in developed countries but on much higher demand growth (5-10%) in developing countries.¹³ The high growth estimates for developing countries are based on high population growth combined with smaller consumption and smaller stocks per person in developing countries, where both income and price elasticities for textile demand are relatively high. Continued income growth combined with reduced price will achieve a considerable expansion of sale at their home markets.

On the contrary some developing countries discourage domestic consumption in favor of export expansion. This strategy not only tends to aggravate the conflict in textile trade but also to retard the growth of domestic consumption and then ultimately domestic production. Producers in developing countries should be advised to develop new products suitable for their domestic market and take advantage of the expansion of domestic consumption.¹⁴ They should also be advised to improve their skill and technology so that they can join the trade in differentiated products to meet the change in world demand structure.

The renewal of textile industry in developed countries itself is not to be blamed, but concerted efforts for adjustment are needed in both developed and developing countries if the harmonious international division of labor is to be developed. Both groups should understand correctly the present situation of textile consumption and production change. Quota restriction along the line of current MFA is not advisable because it will distort the market mechanism further and aggravate the conflict between developed and developing countries.¹⁵ Rather the following adjustment efforts should be made on the basis of market mechanism.

Developed countries should eliminate gradually quota restriction under the MFA on the one hand, and streamline adjustment assistance on the other so as to transfer wage difference exports to developing countries. The renewal of the industry will help the adjustment process through absorbing skilled workers and competent managers to the surviving section, while these industry-specific resources will be left idle forever in case of the entire disappearance of the industry.

Developing countries should modify their strategy so that domestic demand for textiles may be expanded further and their export be diversified so as to incorporate products originating from labor intensive branches of industries which have so far been regarded as capital

¹³ Nihon Kagaku Seni Kyokai (Japan Chemical Fiber's Association), *Sekai-no Seni-Juyo-no Torendo* (Trend of World Textile Demand), January 1982.

¹⁴ It is reported that textile consumption has been restricted under rationing in China. But the Chinese government sees the recent increase in unsatisfied demand for textiles and foresees that China's export capacity of textiles and clothing will be limited in future by the increase in domestic absorption. See another MITI study Mission's, *Report on Asian Textile and Clothing Industry*, May 1982.

¹⁵ The author analysed the impact of surplus capacity of textile and clothing production and compared two alternative solutions, one being the full extension of the present MFA and the other the gradual liberalization toward freer textile trade, in his, "Trade and Industrial Adjustment in the Asia-Pacific Region" in *Prospects for Closer Economic Cooperation in the Asia-Pacific Area*, The Asian Club, February 1981.

intensive and not suitable to the relative factor endowment of developing countries. For instance both multinational firms and developing country businessmen have developed some processes of electronics and other light machinery production by quickly foreseeing their cost advantage in production. There still remain unexplored labor intensive production processes in other machinery and metal manufacturing. Reshuffling of comparative advantage of narrowly defined industries in both developed and developing countries will contribute to an intra-industry specialization beneficial to both groups.

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