OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

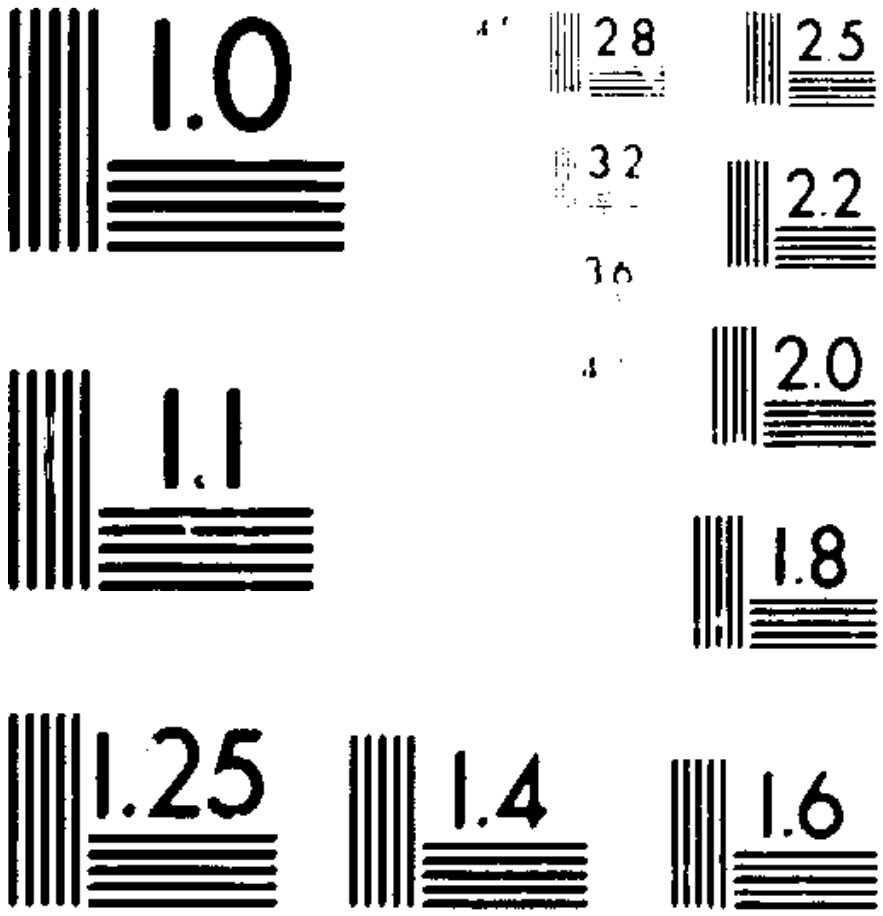
FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org



14244

Ms. Lynn M. TELKA

Distr.
LIMITED

UNIDO/IS.
19 November 1984

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

ENGLISH

TRENDS IN THE INTERNATIONAL TEXTILE AND CLOTHING INDUSTRY AND IMPLICATIONS FOR RESTRUCTURING IN LATIN AMERICAN COUNTRIES

Prepared by

Regional and Country Studies Branch

Division for Industrial Studies

3019

* This document has been reproduced without formal editing.

The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

TABLE OF CONTENTS

1.0 INTRODUCTION

This paper provides some of the background information and analaysis required for an assessment of the implications that contemporary changes in the global textile industry have for restructuring in the Third World. It proceeds from the observation that the textile industry, whether as a supplier of domestic wage goods or as a foreign exchange earner, remains an important component of Third World manufacturing activities. Where domestic textile firms have become high cost and inefficient producers neither of these two goals, however, is well served. A restructuring strategy that improves the efficiency, productivity and capacity utilization of the industry as a whole, with or without further expansion of capacity or significant capital investment and alters the industry's production patterns to ensure continuous adjustment to changes in technology, relative prices, tastes, incomes and competitive conditions may be required.

For Third World countries today, the development of a restructuring strategy of this sort is rendered increasingly more difficult (i)by dramatic shifts in the pattern of international competition, in part, engendered by changes in technology-- the development of new products (synthetic fibers , non woven goods)and the increased automation and computerization of design and manaufacturing processes (ii) by the lack of flexibility in the choice and modification of products and processes which results from the internationalization of production and the penetration of consumption norms (iii) by the selective protection which has come to characterize north-south trade in textiles and clothing over the past decade and (iv) by domestic structural rigidities including patterns of income distribution, industrialization and endebtedness which render restructuring strategies politically painful. Despite these difficulties, for certain of the Third World countries, a textile restructuring strategy has become imperative.

With a view to setting the framework for a discussion of textile and clothing restructuring in the Third World, notably in Latin America,this paper begins by outlining changes in the global pattern of production and trade in the textile and clothing industry (sect.2), speculates on the size and shape of future markets (sect.2) and on rates of technological change (sect.3), evaluates the extent to which textile and clothing industries in the advanced industrial capitalist countries,henceforth AICs, have been restructured, (sect.4) projects the consequences of this restructuring for trade liberalization in the short and medium terms (sect.4), briefly looks at restructuring in the Third World (sect.5) and by way of conclusion, assesses the likelihood of further delocalization of textile and clothing production by firms in the advanced industrial capitalst countries (sect.6)

2.0 THE GLOBAL PATTERN OF PRODUCTION AND TRADE

This section outlines the continued importance of textile and clothing production in Third World manufacturing activity stressing,however, that growth of this industry ,for the most part, has not been predicated upon exports and indeed that textile exports have been atleast as important in the AICs as in the Third World (2.1). It,then, situates the trade in textile and clothing products in the broader context of recession and protection induced expansions and contractions in world trade (2.2); identifies the major markets for textile and clothing imports (2.3) and takes a look at consumer demand projections for these markets. Finally it assesses the extent to which newcomers have gained entry into the group of textile exporting nations and the markets they are serving (2.4)

2.1 The Structure of World Textile Production

From 1967-1979 world textile production grew but at a slower rate than all manufacturing. Using 1975 as the base year , the data in Table 1 show that textile output grew far slower in 1973-79 than in the period 1963-73 in both the advanced industrial capitalist countries and in the Third World . Clothing output grew somewhat faster than textile output in the latter period.

Table 1

Among major third world textile producers (Table 2) no consistent pattern in the growth of textile and clothing production emerges during the 1970s and early 1980s as political and economic factors exogenous to the textile industry intervened in unexpected ways to shape activity in this sector. Thus in Argentina,the deindustrialization policies of the ruling military junta led to a drmatic fall in textile production during the 1970s. In Colombia, however, without such dramatic political shifts, textile production remained close to its 1973 level in the early 1980s. Whereas in some Third World countries, Brazil, Korea, and Mexico, for example, clothing output grew significantly more rapidly than

Table 1
World Textile Production

	Developed Mkt.Economies		Developing Countries		Centrally Planned Countries	
GROWTH RATES[a] OF OUTPUT (percent)	1973/ 1963	1979/ 1973	1973/ 1963	1979/ 1973	1973/ 1963	1979/ 1973
All Manuf. ISIC 300	5.2	2.3	7.1	5.3	8.9	7.0
Textiles ISIC 321	3.9	-0.1	4.7	2.4	6.3	4.6
Clothing ISIC 322	2.8	1.4	3.5	3.0	8.2	5.5
STRUCTURE[b] OF OUTPUT (percent)	1963	1979	1963	1979	1963	1979
Textiles	5.4	3.9	13.4	8.8	8.8	6.0
Clothing	3.6	2.6	3.4	2.3	5.4	4.3

Notes: a Growth rates computed from indices of industrial production with 1975 as the base year.

b Manufacturing output calculated in 1975 prices.

Source: UNIDO (1983) Table III.6,p.70 and TAble III.7, p.71.

textile output. In other countries,India and Uruguay, for example, the reverse was true.

Table 2

With regard to employment,however, a pattern of rising production and declining or stable employment in the textile industry emerges from a comparison of production and employment indices contained in Table 2. In Hong Kong, Indonesia and Mexico, for example, production rose and employment fell. In Korea the index of textile production rose 26 points between 1978 and 1980 whereas the index of textile employment remained stable. In clothing, the index of production rose 27 points and employment fell in this period. India is an important exception to the general stability or decline in textile employment as production rose. There the large cottage industry sector obscures the growing capital intensity of production noticeable elsewhere.

Despite the slow growth of textile employment in the Third World, the share of textile and clothing in both production and employment is considerably higher there than in the advanced industrial capitalist country. In 1980, for the main textile producing and exporting countries, excluding China, the combined share of textiles and clothing ranged from 10 to 25 percent of manufacturing value added and 15 to 30 percent of employment. In the AICS textiles and clothing accounted for between 4 and 5 percent of manufacturing value added and 7-11 percent of employment. (UNCTAD: 1984_b,56).

While a relatively important share of third world textile and clothing production is exported, the claim that output growth in the Third World is essentially geared towards exports is exaggerated. From amongst those countries for which a rough approximation of the percentage share of production that is exported could be calculated(Table 3) only Hong Kong and Korea rank exceptionally high and in each of these instances we are dealing with countries which are poorly endowed with natural resources and rely heavily on textile and clothing manufactures for their export earnings. In the case of Hong Kong textile and clothing accounted for 40.6 percent of total exports in 1980, down from a high of over 50 percent in the mid 1970s. For Korea, textiles and clothing were some 30 percent of total exports in 1980, down from over 40 percent in the early 1970s.In Argentina, Brazil, Colombia and Mexico textiles and clothing accounted for between 5 and 9 percent of total exports in 1980, in Singapore just over 4 percent and in India around 20 percent throughout the second half of the 1970s.(UNCTAD: Handbook of International Trade Statistics,1983). Comparing Third World and AIC producers,moreover, reveals that the share of textile

Table 2
Employment and Production Indices: Total Manufacturing
Textiles and Clothing: Selected Developing Countries

(1973=100)

		1978	1979	1980	1981	1982
ARGENTINA:	Production					
	Manufacturing	94	103	99	84	
	Textiles[a,e]	88	98	83	86	
BRAZIL:	Production					
(1975=	Manufacturing	125	133	143	115	115
100)	Textiles	111	117	126	117	122
	Clothing [a]	113	118	125	124	128
COLOMBIA:	Production					
	Manufacturing	129	135	138	136	
	Textiles	106	102	98	101	
	Clothing [a]	95	100	106	108	
HONG KONG:	Production					
	Textiles [e]	111	118	108	94	84
	Employment					
	Textiles	79	80	78	75	69
INDIA:	Production					
	Manufacturing	129	129	130	140	145
	Textiles	106	106	111	112	99
	Clothing [b] [d]	79	82	76	93	84
	Employment					
	Textiles	110	114	115	118	116
INDONESIA:	Production					
(1975=	Manufacturing	146	158	194	213	213
100)	Textiles	111	118	122	132	125
(1977=	Employment					
100)	Textiles	102	105	107		
KOREA[a]:	Production					
	Manufacturing	303	340	333	378	397
	Textiles	170	183	196		
	Clothing	303	340	330		
	Employment					
	Textiles	181	195	181		
	Clothing	202	201	191		
MALAYSIA[c]	Production					
	Manufacturing	166	182	193	199	
	Textiles[e]	187	186	191	195	
	Employment					
	Textiles	150	160			
MEXICO:	Production					
	Manufacturing	129	141	149	158	
	Textiles	113	121	118	123	
	Clothing [a]	125	135	134	139	
	Employment					
	Textiles	103	106	109	111	108

PAKISTAN:	Production					
	Manufacturing	112	116	129	143	162
	Textiles:cotton cloth	66	58	58	52	55
	Textiles:cotton yarn	79	87	96	100	114
PERU:	Production					
	Manufacturing	122	129	153		
	Textiles	106	113	107		
	Clothing	73	69	72		
SINGAPORE:	Production					
	Manufacturing	141	162	182	200	189
	Textiles	93	91	95	85	63
	Clothing	103	108	103	98	95
Uruguay :	Production					
	Manufacturing	129	142	145		
	Textiles	140	166	169		
	Clothing (d)	123	122	116		

Notes: (a) Quarterly data seasonally adjusted
(b) Includes made-ups
(c) Excludes Sabah and Sarawak
(d) Includes footwear
(e) Includes clothing
(f) Annual data for fiscal year July-June
(g) Textile spinning and weaving

Source: UNCTAD (1984 b), Tables 5.1 and 5.2.

and clothing production exported by the advanced industrial capitalist countries is in many cases far higher than that exported by developing countries.

Table 3

This does not deny the fact that a number of Third World textile producers experience a boom in textile exports during the period 1955-1973. In India, the share of textile exports in manufactured exports (excluding jute) rose from 25.6 percent in 1955 to 31.9 percent in 1963, while in Korea and Taiwan, textile exports emerged in this period as the major component of their manufactured exports accounting for 20.5 percent and 31.0 percent of manufactured exports respectively in 1963. This initial rapid growth of textile exports, however, was followed by a decline as (i) restrictive measures were taken in major importing markets (b) the world-wide recession led to a contraction in textile demand and (c) in some countries a measure of economic diversifi- cation led to increased exports from other industries and sectors. A number of Third World producers also shifted production downstream towards the clothing industry in this period (Table 2).

In sum, despite the growing capital intensity of production in the textile industry, textile and clothing production remains a major contributor to manufacturing value added and employment. Although in only a few of these countries is a significant portion of domestic textile production exported, the importance of textile exports grows to the extent that the domestic market is small or only slowly widening, the range of manufacturing activities is limited and/or the import content of the industrial sector is high. Under these conditions restrictions,such as the MFA, deal a heavy blow to the contribution which the textile industry can make to industrial growth and technological change in these countries.

2.2 World Trade and the Global Recession

World trade rose steadily throughout the 1970s although at a declining rate of growth in the latter part of that decade. In 1982 and again in 1983,however, total world imports declined in absolute terms (Table 4). The decline in imports was greatest in the European Economic Community (EEC) where imports fell 11.5 percent in 1981 over 1980, a further 4.5 percent in 1982 and 3.8 in 1983. In the United States imports fell 1 percent in 1981 over 1980, declined

Table 3
Share of Textile and Clothing Production Exported
by Developed and Developing Countries: 1980

	Production	Percent Exported		Production	Percent Exported
Brazil	18.5(a)	4	United States	94.5	5
Korea	10.0	44	Japan	50.2	11
Mexico	9.7(a)	2	Germany	29.2	31
India	9.5	14	France	24.1	11
Hong Kong	9.2	57	Italy	23.0	29
Colombia	2.2	11	United Kingdom	20.5	24
Phillipines	1.5	23	Spain	17.5	6
Indonesia	1.4	10	Canada	8.6	4
Malaysia (c)	0.7	33	Belgium	6.0	75
Uruguay	0.7	33	Netherlands	4.2	75
Peru	0.6	33	Austria	3.5	53
			Switzerland	3.2	59
			Portugal	3.0	41

Notes: (a) Gross output at current prices and exchange rates
(b) Estimated
(c) 1979

Source: UNCTAD (1984_b) Table 5.3

5.4 percent in 1982 and a further 1.2 percent in 1983. The pattern for Japan was more variable with imports continuing to rise by 2 percent in 1981 over 1980,then falling by 7.9 percent in 1982 and rising again by 11.4 percent in 1983.

Table 4

Since the 1960s, the United States has accounted for between 12 and 14.5 percent of world imports. Japan's share of world imports, 4.7 percent in 1965,rose to 7.7 percent by 1983 but the EEC,which had absorbed some 40 percent of world imports in the 1960s,only accounted for an average of 31 percent in the 1980s. The share of CMEA countries in world imports also declined from over 10 percent in the 1960s to an average of 8.4 percent in the period 1980-83. Whereas collectively these countries had accounted for nearly 70 percent of world imports in the 1960s, their share of world imports had declined to 60 percent in the early part of the 1980s.

What these figures suggest is that the growth of Japanese imports may not be rapid enough to absorb increasing exports at a time when the EEC-9 ,which traditionally absorbed the lion's share of world imports,continues to suffer the effects of economic recession. As to the US, despite the appearance of recovery, there is little evidence, as we shall see in Section 4, of a move towards trade liberalization in those industrial sectors exposed to international competitive pressures. Insofar as the Third World is concerned, markets have been growing in precisely those countries which in the 1970s became major textile producers and exporters --Hong Kong, Korea, China and Singapore. This, as we shall see in the next section, may reflect a growing inter- country specialization in textile production.

2.3 The Market for Textiles and Clothing

Between 1967 and 1982 world trade in textile products rose by 2.7 percent (measured in constant dollars) whereas world trade in all manufactured products increased by 2.9 percent. Most of the increase in textile trade,moreover, can be attributed to the clothing rather than the yarn and fabric parts of the industry (Table 5).

Table 5

Table 4
The World Market

($US '000 millions)

	1965	1969	1973	1977	1981	1982	1983
World Imports	174.3	154.7	599.8	1163.1	2034.4	1924.4	1901.8
of which							
USA (%)	12.2	14.1	12.4	13.5	13.4	13.3	14.2
EEC-9 (%)	40.3	40.2	36.3	33.7	31.4	31.7	30.8
Japan (%)	4.7	5.8	6.4	6.1	7.0	6.9	7.7
CMEA(a) (%)	11.9	10.9	9.8	9.1	8.0	8.4	8.7
Total (%)	69.1	71.0	64.9	62.4	59.8	60.3	61.4

Notes: (a) Centrally Planned Europe and the USSR

Sources: United Nations Monthly, Bulletin of Statistics (July,1973) and (July, 1984) and the UNCTAD, Handbook of International Trade and Development Statistics, 1983.

Table 5
Textiles as a Percent of World Trade(a)

	1967	1982
fibers,yarns and fabrics	4.6	3.0
clothing	1.5	1.9
knit goods	1.0	1.2

Notes: (a) in constant $US

Source: Boudard (1984),pp.113.

In terms of its share in world trade,however, trade in textiles was declining. Thus,whereas world trade in textiles, excluding petroleum, had amounted to 5.6 percent of total merchandise exports in 1955,by 1963 it had declined to 5.0 percent falling to 4.6 percent in 1973 and to 3.6 percent in 1982 (GATT:1984,A.7). While this declining importance of textile exports was everywhere in evidence among the advanced industrial countries, it was most pronounced in Japan where the share of textiles in total merchandise exports fell from 29.3 percent in 1955 to 3.7 percent in 1982.

The share of textiles in world trade in manufactures also fell substantially from 11.3 percent in 1955 to 4.9 percent in 1982. Amongst developed countries the decline was from 10.3 percent to 3.8 percent and among low cost producers including Southern European countries, it was from 34.3 percent in 1955 to 10.6 percent in 1982 (GATT:1984,A.6).

During the period 1963-82, the EEC-9 remained the largest market for textile imports, taking 33 percent of world textile imports in 1963, 39 percent in 1973, 43 percent in 1979 and 35 percent in 1982. Only 30 percent of these imports,however, came from outside the EEC in 1963 and this percentage rose to only 37 percent in 1982.(Table 6).

Table 6

The American share of world textile imports shrank from 10 to 6 percent over these two decades, while the Japanese market share rose from 1 to 3 percent in the period 1963-82 (Table 6). Collectively the AICs accounted for 58 percent of world textile imports in 1963, 63 percent a decade later but only 55 percent in the early 1980s and the bulk of these imports came from other advanced industrial capitalist countries (Tables 6).

In clothing, the EEC market was again the largest and more than half of its imports by the early 1980s came from outside the EEC--the share of extra-EEC clothing imports doubling from 12 to 24 percent between 1963 and 1982 The US share of world clothing imports rose less spectacularly from 18 to 22 percent. The AICs collectively accounted for 67 percent of world clothing imports in 1963, 82 percent in 1973 and 80.7 percent in the early 1980s (Table 6).

Looking at total world imports of textile and clothing products (SITC 26+65+84) one is struck by the fact that the share of total world imports originating in the AICs fell so little over the decades of the 1960s and 1970s--from 67.7 percent in 1965 to 62.0 percent in 1980 and that with

Table 6

Share of World Imports[a] of Textiles and Clothing
Purchased by Developed Countries: 1963-1982

	US	Canada[b]	Japan	EEC (9) Total	EEC (9) Intra EEC	Other Western Europe
Textiles						
1963	10[b]	4	1	33	23	10
1968	10[b]	4	1	35	25	9
1973	7	3	5	39	27	9
1978	6	3	4	41	27	8
1980	5	2	3	41	25	8
1981	6	3	3	34	21	7
1982	6	2	3	35	22	7
Clothing						
1963	18[b]	3	-	35	23	11
1968	19[b]	3	1	36	24	11
1973	17	3	5	46	26	11
1978	22	2	4	48	24	11
1980	17	2	4	49	22	11
1981	20	2	4	43	19	10
1982	22	2	4	42	18	10

Notes: a World imports are based on f.o.b. values, therefore the share of countries reporting c.i.f. values is somewhat overstated.

b f.o.b.

Source: GATT (1984) Table A.10.

growing Third World exports, the share of textile and clothing products originating in the AICs and sold in the AICS fell even less--from 76.4 percent in 1965 to 73.9 percent in 1980(Table 7). As to the Third World , the share of textile and clothing products originating in the AICs and sold in the Third World actually fell from 19.4 percent in 1965 to 17.5 in 1970, rising slightly to 17.8 percent in 1975 and again in 1980 to 18.7 percent. While the share of world textile and clothing products originating in the Third World rose over this period the increase ,in the aggregate, was not that remarkable-- 22.7 percent in 1965 to 27.7 percent in 1980 and the attractiveness of advanced industrial country markets was again evident. Thus 60.1 percent of the textile and clothing products originating in the Third World were sold in AIC markets ub 1965 rising to 65.1 percent in 1980. The corresponding increase in the share of textile and clothing products originating in the Third World and sold in the Third World was not as great--23.1 percent in 1965 to 26.5 percent in 1980.

Table 7

When these figures are disaggregated into the most prominent regional markets,it appears that there has been some intensification in intra-regional trade in textile and clothing products,notably in the EEC, ALADI and South-South East Asian regions over the period 1965-80. Thus 62.6 percent of the textile and clothing products originating in the EEC in 1980 were sold in the EEC as compared with 52.5 percent in 1965. Of the textile and clothing products originating in ALADI, 9.4 percent were sold in the ALADI countries in 1970 and 16.9 percent in 1980. In the South and South-East Asian region, the boom in textile exports of the 1960s through the mid-1970s reoriented textile exports away from the region and towards the US and EEC markets. With rising protectionism in these markets, some intra-regional trade specialization and growing regional demand for textiles an intensification of intra-regional trade in textiles as occurred. Thus of the textile and clothing products originating in the South and South-East Asian region, 16.8 percent were sold in the region in 1965, 12.8 percent in 1970, 13.3 percent in 1975 and 14.2 percent in 1980. If Japan is included,then the share of south and south-east Asian textile and clothing products absorbed by the region rises from 20.5 percent in 1965 to 22.2 percent in 1980.

Although markets in the advanced industrial countries thus continue to exercise a considerable attraction for Third World exporters, in planning a restructuring strategy the importance of regional markets should not be overlooked. Given current trade restrictions in the AICS, intra-regional specialization looks even more promising.

Table 7

Share of World Textile and Clothing Imports Originating and Sold in Selected Geographical Regions: 1965-80

(Millions of $US f.o.b.)

	A	B			
	Total World	of which originating in the AICs			
		Total	% of A	Percent Sold in AICs	Percent Sold in Third World
1965	17230	11669	67.7	76.4	19.4
1970	24756	16804	67.8	77.0	17.5
1975	53542	34725	64.8	75.6	17.8
1980	115168	52796	62.0	73.9	18.7

	of which originating in the Third World				
	Total	% of A	Percent Sold in the AICs	Third World	CMEA
1965	3917	22.7	60.1	23.1	12.6
1970	5443	21.9	62.5	23.0	12.5
1975	13135	24.5	64.1	24.1	9.8
1980	31968	27.7	65.1	16.5	4.3

	of which originating in the EEC			
	Total	% of A	Percent Sold in the EEC	All AICs
1965	6228	36.1	52.5	84.2
1970	9719	39.3	57.5	86.6
1975	20768	38.7	62.4	86.0
1980	41201	35.8	62.6	85.9

	of which originating in ALADI				
	Total	% of A	Percent Sold in the US	EEC	ALADI
1965	--	--	--	--	--
1970	699	2.8	14.6	35.3	9.4
1975	1514	2.8	15.5	32.6	14.7
1980	3222	2.8	13.1	32.4	16.9

	of which originating in S. & S.E. Asia					
	Total	% of A	Percent Sold in the EEC	US	Japan	S.& S.E.Asia
1965	1937	11.2	22.9	22.1	3.7	16.8
1970	3032	12.2	19.9	28.4	7.5	12.8
1975	8513	15.9	25.4	24.2	9.0	13.3
1980	23490	20.3	25.5	23.3	8.0	14.2

	of which originating in Africa			
	Total	% of A	Percent Sold in the	
			EEC	Africa
1965	--	--	--	--
1970	1024	4.1	23.4	5.8
1975	1638	3.1	25.3	7.8
1980	2383	2.1	49.9	6.1

Notes: a This includes SITC 26 + 65 + 84.
b The US is not a major textile exporter. In 1965 its exports were 7.6 percent of total world exports and this was unchanged 15 years later. Its major markets are the AICs which absorbed 54.8% ofits exports in 1980.

Sources: UNCTAD, Handbook of International Trade and Development Statistics 1983, Table A.11.

2.4 Trends in Consumer Demand for textiles and clothing

Demand projections for textiles and clothing products also point to the potential importance of Third World markets and reinforce the conclusion drawn above that greater attention should be paid by Third World textile and clothing producers to the development of regional exports. In addition, the evidence presented below suggests that income redistribution policies will have a more positive impact on the development of the domestic textile and clothing industry in Third World countries than the simple growth of population.

Generally textile demand is evaluated through trends in final consumer demand for clothing, household furnishings and what are called 'made-ups',that is, carpets, linens,curtains and the like. Inflation is taken into account in these calculations by using the consumer price index to deflate consumption figures. The quality of this index, of course, affects the veracity of the 'real' consumption figures thereby obtained. Alternatively one could use trends in fiber consumption as a proxy but this may seriously distort estimates since fiber inputs are only one , and in value terms not necessarily the most important, of the the inputs into the production of textile products. Although fiber consumption figures, by using "weight" rather than value,avoid the problem of dealing with inflation, they introduce another distortion by ignoring the existence of lighter fibers and hence obscuring an important shift in consumer demand towards higher quality products which are most frequently made with lighter weight fibres and yarns.

The following section, therefore, looks at future market trends in terms of the emerging pattern of consumer expenditure for clothing since consumer expenditure figures for other textile products are not widely available. Until such time as new market applications for carbon and glass fibers and special textiles are further developed, consumer demand for clothing,moreover, will likely remain the dominant factor in determining the demand for the output of the textile industry.

Looking first at the advanced industrial capitalist countries , national accounts statistics show that consumer expenditure in general was down considerably in the period 1973-83 over the period 1963-73. In the United States, for example, consumer spending rose by an annual average rate of change in volume of 4.4 percent in 1963-73 but only 2.6 percent in 1973-1982. In Japan , the drop was even greater--8.7 percent in 1963-73 to 3.0 percent in 1973- 83. For the EEC (9), the decline in the rate of increase in consumer spending was also substantial--4.5 percent in 1963-73 and 2.2 percent in 1973-83 (GATT:1984,Table A.2). In these major consuming countries, with the exception of the United States, Sweden and within the EEC, the United Kingdom, the rate of growth in consumer expenditure on clothing fell even more markedly . Thus in Japan the annual average

percentage rate of change in consumer spending on clothing fell from 6.9 percent in 1963-73 to 0.3 percent in 1973-82 declining further into a negative rate of growth in the early 1980s. The growth of consumer spending on clothing in Japan, thus, lagged well behind the 3.0 percent growth rate in overall consumer spending during the latter period. Similarly in the EEC the growth of consumer spending on clothing fell from 3.9 percent in 1963-73 to 0.9 percent in 1973-83 declining to a negativbe rate of growth of -0.2 percent during the early 1980s. As in the Japanese case,consumer spending on clothing lagged behind total consumer spending. Only in the United States, the United Kingdom and Sweden did the rate of increase in consumer expenditure on clothing in the period 1973-1982 remain above the annual average percentage rate of change in consumer expenditure as a whole. For the U.S. consumer expenditure as a whole rose by 2.6 percent in the 1973-82 period but consumer expenditure on clothing rose by 4.0 percent. In the United Kingdom these figures were 1.1 percent and 2.5 percent respectively and in Sweden they were 1.4 percent for total consumer expenditure and 4.4 percent for consumer expenditure on clothing. (GATT:1984, Table A.2).

Whereas the slow down in consumer expenditure on clothing undoubtedly reflects the sharp contraction in total consumer expenditure during this period of crisis, the relatively higher rate of consumer expenditure on clothing relative to total consumer expenditure in the US, UK and Sweden, still remains to be explained.One possible explanation lies in the movement in relative prices in the 1970s in these three countries. In each of the "... cases in which consumer expenditure on clothing expanded faster than total consumer expenditure, the rise in consumer prices for clothing was much less than the rise in total consumer prices ..." (UNCTAD:1984$_b$,119-120). Moreover,in the US and UK where disaagregated data for the clothing sector exist, it was found that the prices for women's clothing increased more slowly than the prices for men's clothing and the slower increase in prices was directly correlated with the more rapid expansion in consumption of women's clothing relative to men's clothing in this period (UNCTAD: 1984$_b$,120). The result of two German studies,moreover,confirm these findings. There,the price elsatisticty of consumer demand for clothing was also higher than for other consumer goods and between 1975 and 1978 the price elasticity of consumer demand for clothing tended to increase. What these changes in consumer demand appear to suggest,therefore, is a growing sensitivity to price changes and or price-quality relationships resulting from the differntial impact of the crisis (intermediated by government policies) on incomes in these countries. The price elasticity of consumer demand for clothing, it might be hypothesized, tended to increase where ,on the one hand, income leveling made consumers more responsive to downward shifts in prices resulting from increased low cost imports and, on the other hand,net increases to income in upper stratas of the population increased sensitivity to quality,

uniqueness and other product specifications. (UNCTAD: 1984$_b$, 120). In predicting future market trends, these characteristics of consumer spending need to be further investigated but they suggest a growing market in the advanced in industrial countries for both low priced mass textiles and for high priced luxury textiles. As we shall see in section 4, however, with textile restructuring, the advanced industrial capitalist countries may be able to cater efficiently to both sets of demands.

In the Third World, data on consumer expenditure on clothing was only available for six countries. These data, however, showed that with the exception of India, total consumer expenditure consistantly rose more rapidly than expenditure on clothing in the 1973-82 period. Compared with the advanced industrial capitalist countries, consumer expenditure on clothing rose more rapidly in the Third World, though from a considerably lower base. In India, the annual average percentage rate of change in the volume of consumer expenditure on clothing over the period 1973-80 was 7.0 percent. In Korea it was it was 6.7 percent, in Mexico 4.6 percent, in Singapore 7.3 percent, in Thailand 6.8 percent and in Sri Lanka 10.1 percent. (GATT: 1984, Table A.2 and UNCTAD: 1984$_b$, Table 5.4).

Citing World Bank estimates of real GDP growth in the Third World of 5.5 percent for the period 1985-95 , GATT conludes that per capita income growth will coincide with higher population growth in the Third World (2.2 percent in the Third World compared with 1.1 percent in the CMEA and 0.7 percent in the AICs) to sustain this rising rate of consumer demand for clothing. (Gatt: 1984, 166). While this is certainly true, the suggestion that clothing will be an even more important source of textile demand in the Third World than in the advanced industrial capitalist countries does not follow automatically from the above since the aggregation of demand for all Third World countries ignores the distribution of income growth among (and within) these countries, overlooks present debt problems and the austerity measures to which they have given rise and assumes that countries with higher growth rates have larger populations and thus will constitute significant increases to global textile consump- tion.

Estimates of income and size elasticities for the textile and clothing industry, contained in Table 8 reveal that (i) growth in the textile and clothing industries seems, on average, to be more elastic in response to income growth than to differences in size (ii) that lower income elasticities (slower growth) characterize the textile industry relative to the clothing industry within each country category and (iii) that small countries with modest resources exhibit higher

---

Table 8

Table 8

Income(Y) and Size(P) Elasticities estimated for the Textile and Clothing Industry: 1970-78

	Large Countries		Small Countries with modest resources		Small Countries with ample resources & primary orientation		Small Countries with ample resources & industrial orientation		Centrally Planned Economies	
	Income (Y)	Size (P)	Y	P	Y	P	Y	P	Y	P
Textiles	0.93	-0.08*	1.18	0.86	0.09	0.57	0.74	0.40	0.60	-0.08*
Clothing	1.49	-0.33	1.41	-0.16+	0.72*	-0.33	0.81	-0.11	0.11	0.12

Notes: Elasticities of per capita value added in 1975 dollars with respect to Y = income measured as per capita GDP in 1975 dollars and P = population were derived from regressions on the basis of pooled annual cross country amples. Significance was at the 5 % level except were marked by * or + indicating less than or greater than a significance level of 10%.

Source: UNIDO, Handbook of Industrial Statistics (New York:1982) Table 8,p.28.

income elasticities of growth for textiles and clothing. The potential importance of Third World countries as markets for textile and clothing products thus depends heavily upon income, rather than population,growth. Within a national context,moreover, these estimates suggest that attention to income growth and distribution is likely to have an important positive effect on the growth of domestic textile and clothing production.

2.5 Third World Textile Exporters and Their Markets

Between 1965 and 1981 the Third World's share in world textile exports rose from 16 to 24 percent. Their share in world clothing exports grew even more dramatically--from 14.8 percent in 1965 to 41 percent in 1981. Much of this growth, however, was the result of increasing exports from a small number of Asian countries. The share of 'developing Asia' in world textile exports, for example, rose by 12.9 percent in 1965 to 18.8 percent in 1981. Alone,these countries thus accounted for 80 percent of all Third World textile exports in 1965 and despite a growing number of Third World producers and exporters, 78.3 percent of Third World exports in 1981. With respect to clothing exports, 'developing Asia' was also in the vanguard. They accounted for 13.4 percent of world clothing exports in 1965 and 36.6 percent in 1981. Their share of total Third World clothing exports, 90.5 percent in 1965 and 89.3 percent in 1981 was, thus,even higher than their share of total Third World textile exports. (CTC: 1984,22). Amongst the major Asian textile and clothing exporters are Hong Kong, South Korea, Singapour, Taiwan (Province of PRC) and since the mid-1970s, the People's Republic of China. While the number of Third World textile and clothing exporters has increased, their share of sector exports remains quite modest.

Despite the dramatic growth in textile and clothing exports from Asian developing countries, only four (one more than in 1963) Third World countries were among the fifteen leading textile exporting countries in 1982. These were India, Pakistan, the Province of Taiwan and South Korea . (Gatt:1984,41). Hong Kong ,which had figured in this list in the 1960s and early 70s, had by 1982 moved into first place amongst the top 15 clothing exporters with Korea, Taiwan and the People's Republic of China in third,fourth and sixth place respectively. Although the number of top Third World clothing exporters had increased, of the top five clothing exporters in 1982 ,two, Italy and the Federal Republic of Germany, were advanced,industrial capitalist countries and six of the top ten were MICs (GATT:1984,42 & 43).

Third World textile and clothing exporters do not all export the same range of products nor do they export with the same intensity to the same set of markets. In the Korean case, for example, 60 percent of its secteur exports are in clothing and its major overseas markets are Japan and the US and to a lesser extent the EEC. Korea's rapid export

expansion,however, is also "...being sustained by exports to other markets, including the People's Republic of China, the Middle East and Africa."(CTC:1984,24).Korea,however, imports the bulk of its natural fibers and and a large proportion of its manmade fibres as well. Major exports from the Province of Taiwan, on the other hand, are knit raw fabric and products, clothing, garments and sweater and most recently, manmade fibres. "In 1981, the United States took 30 per cent of total exports of textile products from the Province of Taiwan, followed by Hong Kong (16 per cent) and Japan (9 per cent)." (CTC:1984,24) Although Hong Kong has emerged as the world's top clothing exporter it continues to export textiles at the same time as its textile imports have risen considerably over the 1970s. Over time,however,these three Asian countries have tended to specialize primarily in clothing exports. Elsewhere different specializations have emerged. Mexico and Taiwan ,for example, have considerably developed their man-made fiber exports,especially to the US market. (Textile Organon, April 1983). In still other Third World countries, notably in Brazil, Egypt, India and Pakistan, yarns and fabrics remain the principal textile export (UNCTC:1984,25).

Despite some degree of specialization among Third World exporters, trade barriers and reduced consumer demand for textile and clothing products in the AICs slowed the entry of new Third World countries into the group of textile and clothing exporters in the latter half of the 1970s and early 1980s (Table 9). A shrinking share of textile imports into the EEC,for example, is shared by a larger number of Third World producers and whereas that number grew from 7 to 11 between 1963 and 1973 only Thailand joined the EEC's Third World textile suppliers during the 1970s. In clothing, on the other hand,India, Taiwan, Turkey, Korea, Macao and Singapore joined the ranks of EEC supplier countries in 1973 and Thailand, Malta, Tunisia and the Philippines in 1982 as Hong Kong's share of clothing imports into the EEC dropped dramatically from 45.2 percent in 1973 to 27.9 percent in 1973 and 17.7 percent in 1982 and the total share of Third World countries in EEC clothing imports increased. In Japan the Third World share of both textiles and clothing have falled and no new supplier countries gained entry into the Japanese market between 1973 and 1981. In the United States, in contrast, the Third World share of both textile and clothing imports rose in the 1970s and Taiwan, Korea, Iran, Bangladesh ,Brazil and Thailand joined the supplier countries in 1973 and China, Peru, the Dominican Republic, Macau and Sri Lanka became US suppliers by 1982. As in the EEC,however, there was a slow down in the number of new entrants in the post -1973 period as compared with the pre-1973 period.

Table 9

Table 9

Share of Third World Countries in the Import Market for Textiles and Clothing--EEC, USA and Japan--1963,1973,1982

(percentages)

	EEC					
	Textile Imports			Clothing Imports		
	1963	1973	1982	1963	1973	1982
India	14.6	4.8	4.9		1.5	3.8
Hong Kong	6.6	3.8	2.0	45.2	27.9	17.7
Iran	6.4	8.8	2.2			
China	3.0	3.0	5.4			2.8
Pakistan	2.5	2.8	3.1			
Egypt	1.5		1.3			
Afganistan	1.3					
Taiwan		3.5	2.5		5.3	3.8
Brazil		3.1	3.1			
Turkey		2.5	5.1		1.4	2.5
Korea		1.2	2.7		4.2	10.2
Morocco		1.0	1.2			1.7
Bangladesh		1.0				
Macao					1.8	2.5
Singapore					1.0	1.3
Thailand			1.4			1.4
Malta						1.5
Tunisia						3.6
Philippines						1.5
Total No.of Suppliers	7	11	12	1	7	13
percentage of total imports	35.9	35.5	34.9	45.2	43.1	54.3

Table 9 continued

	JAPAN[d]			
	Textiles and Clothing		Clothing	
	1973	1981	1973	1981
Korea	23.5	29.6	40.8	36.4
Hong Kong	5.6	3.2	10.5	5.7
Pakistan	5.1	2.3	...c	...
India	1.5	1.2	0.2	1.6
Thailand	1.6	1.0	0.2	0.4
Malaysia	0.2	0.6	...	...
Philippines	0.5	0.6	0.4	1.1
Singapore	0.6	0.2	...	...
Argentina	0.9	0.2	...	...
Total 9 countries	39.5	38.9	52.1e	45.2e

Notes:
a Excluding Southern Europe (Greece, Yugoslavia, Romania, Spain and Portugal)and including only Third World countries which account for 1 percent or more of imports.
b Excluded intra-EEC trade.
c signifies less than 0.5 per cent
d The Japanese figures exclude Taiwan and the People's Republic of China
e Totals exclude countries with market shares of less an 0.5%

Sources: Based on General Agreement on Tariffs and Trade, Textiles and Clothing Statistics, COM.Tex/W/134, Section 2 and reported in GATT(1984) Tables 2.19, 2.20.A.11 and A.12 for the EEC and USA and UNCTC (1984) Annex Table 2.12 for Japan.

Table 9 continued

	USA					
	Textile Imports			Clothing Imports		
	1963	1973	1982	1963	1973	1982
India	25.4	11.9	5.3			1.4
Mexico	3.8	3.7	2.0		4.6	2.0
Hong Kong	3.2	5.7	4.4	16.0	20.1	24.1
Pakistan	2.4	1.2	2.9			
Philippines				6.9	2.6	3.3
Taiwan		1.6	5.8	1.7	16.9	18.9
Korea		1.3	6.5	1.0	11.3	17.3
Iran		1.2				
Bangladesh		4.3	2.3			
Brazil		1.7	3.0		1.0	
Singapore					3.8	2.1
Thailand			1.4		1.2	1.2
China			8.6			7.8
Peru			1.5			
Dominican Rep.						1.4
Macau						1.3
Sri Lanka						1.3
Total No.of Suppliers	4	9	11	4	8	12
Percentage of Imports	34.8	32.6	43.7	25.6	61.5	80.7

The data in Table 9 also show that along with some shifts in position among the major Third World exporters, their share of imports into AIC markets appears,in some instances,to have grown slightly over the 1970s. In 1973, for example, Korea accounted for 23.5 percent of Japan's textile and clothing imports and in 1981 this had risen to 29.6 percent. Among US clothing suppliers, Hong Kong, Korea and Taiwan had accounted for 48.3 percent of US imports in 1973 and 60.3 percent in 1982. There have also been a number of Third World textile exporters which have lost ground over these two decades without moving into higher value added clothing exports-- Iran, Egypt, Afganistan and Bangladesh in the case of the EEC;Iran and Bangladesh in the US market. Mexico's share of US textile and clothing imports declined over the period 1973-1982 as did the share of Pakistan, Singapore and Argentina in the Japanese market and Taiwan and Korea's share in the EEC market. While shifting comparative advantage might explain some of these changes, political factors both internal to the countries concerned, as in Iran and Argentina, and external,such as the MFA,(in the case of Taiwan and Korea's loss of market share in the EEC), are having a powerful impact in shaping international trade in textiles and clothing. Both technological change and industrial restructuring in the advanced industrial countries are key factors likely to affect the liberalization of trade in textiles and clothing and hence the opening of new opportunities for Third World producers. In the following two sections these factors will be examined in some detail.

3.0 TECHNOLOGICAL CHANGE IN THE TEXTILE AND CLOTHING INDUSTRY

From the earliest beginnings of modern mill production through the inter-war years, technological change in the textile industry focussed on the lengthening of production runs for standardized fabrics and to a lesser extent on increasing machine speeds and reducing machine down-time as cost reduction measures. With the appearance of low cost competitors, stadardized fabric producers have faced a difficult choice. On the one hand they can pursue a mass market strategy but in order to do so must reduce costs through higher machine speeds and automation. On the other hand, they can shift the basis of textile competition from price to product differentiation. A product differentiation strategy ,however,implies shorter runs of specialized fabrics and articles of clothing and this in turn requires increased flexibility in weaving,dyeing,pattern grading, cutting and sewing obtainable through wider ,electronically controlled looms and computer assisted design,production and quality control techniques in weaving,finishing and clothing manufacture. In addition to flexibility,versatility,that is, multiple usage machinery and equipment, improved product quality and high productivity are also required. The current focus of technological innovation in the textile and clothing

industry is directed precisely at these objectives as the classification presented in Table 10 below demonstrate.

Table 10

Specifically technological changes have been made (a) at the opening stage to increase the speed of bale opening, facilitate cleaning and ensure a more homogeneous blending of fibers by computerizing bale selection and chute feeding; (b) at the spinning stage by increasing the speed of carding machines, drawframes,roving frames and rotors and/or,in the case of open end spinning,the elimination of the roving stage altogether,by redesigning pickers and carding machines so as to permit more uniform processing and higher yarn quality and rotors so as to produce finer yarns,by introducing the open-end spinning process for medium and coarser yarns, and by automating transfers between stages in the process; (c) at the weaving stage through the development of the shuttleless loom, with higher speed and reliability of weft insertion, reduced noise levels, self-lubrication,electronic monitoring for faults and to diagnose stops, automated pattern changing, computer assisted weaving capabilities and smaller machine size; (d) at the finishing stage by increasing machine and process versatility; (e) in knitting by introducing micro-processors which simplify pattern changes and increase versatility in terms of design scope and increasing machine speeds even beyond that which the fastest shuttleless loom can attain (f) in clothing by computerizing pattern grading, marking and cutting, by automating sewing machines, eliminating sewing for certain nonwoven goods and by developing flexible manufacturing systems for small lots by working in close communication with designers and retailers.

While the technical specifications of these innovations are well documented, their economic characteristics have been little studied. The extent and speed with which these techniques have diffused is also impossible to determine from the available data. A more detailed study of these techniques, their impact on the comparative advantage of textile firms in the advanced industrial countries and the advantages and disadvantages of their adoption by Third World producers needs to be undertaken. From the data that are available, however, some speculative conclusions might nonetheless be drawn.

First, the data in Tables 11 and 12 suggest that these new techniques are diffusing more rapidly since 1973 than in the previous decade. By comparing the share of machinery and equipment in total textile investment for selected OECD

Table 10
Technological Change in the Textile and Clothing Industries

	Effect on			
	cost structure	productivity	product quality	flexibility
SPINNING				
computerized bale selection, automatic feed	lowers raw material & labour costs	increases speeds	better fiber blending improves yarn quality	
chute feed to cards		eliminates picker laps & transport	elim. run-out problems which damages fibers	
high speed cards		increases speeds from 4-18 lbs/hr to 100-250 lbs/hr		requires the use of a blending machine
high production combers (automatic lap feeding & can changing)		increases speeds from <100 nips/min to 240 nips/min		
high speed draw frame	reduces K costs since fewer machines	increases speeds from 100 ft/min to 1640 ft/min.	stop motions to stop frame when sliver breaks	
ring spinning	fewer machines with higher speeds	speeds increased from 12000 rpm to 20000		increased versatility
open-end (rotor) spinning	saves floor space; reduces labour costs by 2/3 compared to ring spinning	rotors are 3 1/2 times faster than ring spinning, roving & winding are eliminated		not usable for fine yarns
WEAVING				
Sulzer-Missile Looms (1953) PU model	compact design, wider loom,	self-lubricating reduces wear & maintenance down-time, speed up to 300 ppm, self-adjusting projective brakes eliminates a manual task, unifil elimin.	electronic monitoring & diagnostics for stops	high flex. wide loom, electronic pattern changing
Maxbo Air-jet (Sweden: 1950)		500 ppm		were ltd. to narrower widths

Elitex Water-jet (Czech: 1955)/Nissan looms		500-800 ppm		ltd to smooth hydrophobic filament yarns
Draper-rapier loom DSL model 1957;DLG model	cheaper than airjet;missile looms	300ppm		more versatile than air or water jets, uses wider avg. quality weft yarns
SACM MAV-DN rapier loom	reduces floor space with double width machines,lower noise level	300ppm	electronic monitoring	more versatile than air or water jet looms
Saurer 400 (Picanol PGW, Dornier etc)	cuts space requirements	300ppm	electronic monitoring	more versatile than air/water jet looms
preparation, finishing dyeing	reduce amount of water & hence energy for dryirg	increases speed of drying	electronic quality control	increased machine & process versatility
Knitting	lower labour costs than weaving	faster than looms eliminate sewing of seams		computerized pattern change
nonwovens	cheaper to produce planar assemblies of fibers held together by mechanical interlocking or thermoplastic techniques	eliminates spinning & weaving		
CLOTHING				
pattern grading, fabric spreading marking & cutting	reduce labour & optimnize material usage	increased speeds		computerized automated computerized
automatic/ numerically controlled sewing machines	reduce skill requirements, rationalize sewing process	increased spreeds	enhance uniformity of product	increases flexibility in adjusting to design & pattern changes

countries (Table 13) to the installed capacity in spinning and weaving for the same set of countries (Table 11), moreover, it appears that large investments are being made not to increase capacity, which is falling, but to increase efficiency and product quality.

Tables 11,12,13

Second, investment per employee in the textile industry has been rising steadily over the last ten to fifteen years (UNCTAD:1984$_b$.122). The relative capital intensity in textiles ,however,remains lower than in other industries within the same country. In 1979,for example, "...value added per employee in the textile industry (of most developed countries) represented about 60-70 per cent of the average of value added per employee in all manufacturing [and in] clothing this ratio was ...significantly lower...ranging between 40 and 50 percent"(UNCTAD:1984$_b$,124). What is important for the design of a restructuring strategy and,in particular, the decision as to whether that strategy should be based on the delocalization of production, product specialization or plant modernization is not the inter-industry comparison within a given country but the impact of increasing capital intensity on the comparative advantage of textile and clothing producers in the advanced industrial countries relative to those in the Third World. For the moment, there are few data available to assess this impact. One might, however, hypothesize that to the extent that dramatic increases in productivity result from the modernization of plant and equipment,an alternative to further delocalization of production is created. Support for this hypothesis can be found in data on the shift to shuttleless looms in the United States. In 1972, with 335,200 looms of which only 18,000 were shuttleless, the US produced a total of 11.1 billion linear yards of fabric whereas in 1978 with 33,400 shuttleless looms out of a reduced installed weaving capacity of 262,000 looms, a total of 10.7 billion linear years or 7,725 more yards per loom were produced. (Toyne: 1984,39). It can also be found in an examination of comparative levels of labour produtivity in textile mills with identical modern technologies across AIC and Third World countries. Thus operational data collected on a spinning mill with 10,000 Rieter ring spindles and a weaving mill with 140 Sulzer looms in each of six countries revealed that the level of labour productivity was 1.15 in the US, 1.1 in Japan, 1.0 in the Federal Republic of Germany but only 0.85 in Korea, 0.8 in Brazil and 0.3 in India.(Lall:1984,9).

Table 11
MODERNIZATION OF THE TEXTILE INDUSTRY IN SELECTED OECD COUNTRIES

Country/Region	Installed Spinning Capacity			Installed Weaving[a] Capacity		
	hundred thousand spindles			thousand looms		
	1963	1973	1981[b]	1963	1973	1981[c]
United States	193.6	188.9	167.4	294.8	322.3	248.9
EC(9)	235.0	151.8	92.2	469.5	244.1	142.7
Japan	133.5	118.9	85.1	376.8	323.2	272.6

Notes: [a] Cotton-type looms of which automatic looms constituted 100% of total weaving capacity of cotton-type looms in the US since 1963; 60.3% in the EEC in 1963,rising to 85% in 1973 and 92.1% in 1979 but only 13.8% in Japan in 1963, 37.2% in 1973 and 39.4% in 1979.

[b] Open end rotors in 1981 totalled 2.6 million in the US 3.4 million in the EEC and 1.7 million in Japan.

[c] Of which 18% were shuttleless looms in the US, 22.6% in the EEC and 5.6% in Japan in 1981.

Sources: IFCATI/ITMF cited in GATT:1984,Appendix III,Tables 4,7 & 8.

Table 12
Equipment Modernization Rate in the Japanese Cotton Spinning Industry

Process/Item	Percentage Share of Machines incorporating the new technology in total installed capacity 1970	1975	1980
Card [Doffer: >15 r.p.m.]	6.0	20.8	32.7
comber [>150 nip p.m.]	18.6	41.6	48.6
drawing frame [>160 m.p.m.]	11.0	29.6	52.5
roving frame [>800 r.p.m.]	12.2	25.9	44.4
stop-motion on roving frame	67.1	88.2	96.9
doffer on spinning frame	34.3	42.1	51.2
cleaners on spinning frame	63.3	67.6	77.7
stop-motion on spinning frame	74.9	74.7	85.8
auto.spinning: scutching to carding	7.3	19.6	39.3
auto.spinning:scutching to drawing	2.9	2.2	3.3
automatic winder	32.7	51.9	64.7
auto. yarn cleaner on winder	13.9	32.2	46.2

Source: Japan Spinners' Association, Statistics on Japanese Spinning Industry (various issues) as cited in GATT (1984),Appendix One,Table 6.

Table 13

SHARE OF MACHINERY AND EQUIPMENT IN TOTAL TEXTILE INVESTMENT
SELECTED OECD COUNTRIES

(Percentages)

	1972-74	1975-77	1978-80
Early Modernizers			
Netherlands	83.3	84.6	81.8
Norway	84.1	80.2	78.9
United Kingdom	83.7	86.2	83.6
Late Modernizers			
(i) Delocalizers			
United States	79.4	81.6	83.1
Germany,FR	77.2	82.6	81.8
(ii) Low Wage Countries			
Japan	67.5	79.7	82.4
Italy	79.1	81.4	82.4

Source:GATT (1984),Appendix One, Table A.23.

Third, inspite of the high capital costs involved and the uncertainty about the operating efficiency of these new techniques in Third World environments, some Third World producers have begun to adopt the most technologically sophisticated machinery and equipment. In Korea, Hong Kong, Taiwan and Mexico the automatic loom has almost completely replaced the semi-automatic loom while in Mexico, Hong Kong and Taiwan between 15 and 23 percent of installed weaving capacity in 1981 consisted of shuttleless looms. In the same year, only 18 percent of installed weaving capacity in the United States was composed of shuttleless looms and the corresponding figures for the EEC and Japan were 22.6 percent and 5.6 percent. (See Tables 11 and 14)

Table 14

Evidence from interviews with firms presented in the following section also point to modernization and specialization rather than delocalization as the future adjustment strategy of large,internationalized textile firms. The cost of this new technology ,however, has increased sharply since the 1960s making it more likely that only the larger or financially stronger firms will be in a position to modernize rapidly. This ,in turn, is likely to lead to increased concentration in the textile and clothing industries of the advanced industrial capitalist countries which in the longer run might slow down the process of technological change.

In the medium term,however, the faster technology diffuses, the shorter the competitive edge gained by the innovator and the early adopters. This may have the effect of stimulating modernization in the AICS and to the extent that it does it is likely to oblige those T%hird World countries which, by virtue of their factor endowments, technical and financial capacities or market size are able to adopt similar advanced technologies,to do so in order to maintain their international competitiveness. To some extent this shift was already apparent from the data on production and employment in Third World textile industries presented in Section 2.1. The diffusion of sophisticated technology to a select few Third World countries may also be a factor explaining the ability of the most prominent contemporary Third World textile and clothing exporters to maintain their market share of AIC textile and clothing imports thereby leading to the slower rate of entry of new Third World textile and clothing exporters observed in section 2.5.

The speed with which new technology diffuses and the thoroughness of restructuring activities within advanced industry country textile and clothing industries are also of importance to Third World countries in designing restruc-

Table 14

MODERNIZATION OF THE TEXTILE INDUSTRY: SELECTED DEVELOPING COUNTRIES

Country	Hundred Thousand Spindles				Cotton-Type Looms Thousand			%
	1963	1973	1981[a]	1981[b]	1963	1973[c]	1981	1981[d]
Korea	5.9	13.1	31.7	0.2	16.8	14.1	91.5	1.6%
Hong Kong	6.3	8.9	5.3	0.6	19.9	27.8	23.1	17.3
Taiwan	4.5	22.0	34.5	0.7	15.2	45.5	56.7	16.2
India	146.7	184.9	217.8	...	208.1	205.8	209.2	0.3
Pakistan	24.2	32.9	40.8	0.3	34.0	29.6	25.8	1.9
Mexico	16.5	28.2	30.0	0.4	45.0	49.2	52.5	23.6
Brazil	39.4	40.4	49.0	0.5	110.0	140.6	151.6	3.6

a shore-staple spindles
b open-end rotors
c Of which automatic looms constituted 95% of Korea's installed capacity of cotton-type looms in 1973 and 100% in 1979; 100% in Hong Kong in 1973; 87% in Taiwan in 1973; 18.6% in India in 1973(21.9% in 1979); 74.3% in Pakistan in 1973 (82.3% in 1979), 75.6% in Mexico in 1973 (83.7% in 1979) and 45.4% in Brazil in 1973 (49.4% in 1979).
d shuttleless looms

Source: GATT (1984) Appendix One Tables 4,7 & 8.

turing strategies since they are likely to have a considerable baring on the extent to which protectionist pressures will abate, atleast over the medium-term. The next section looks specifically at this aspect of textile restructuring in the advanced industry countries.

4.0 TEXTILE RESTRUCTURING IN THE ADVANCED INDUSTRIAL COUNTRIES

During the 1960s and 1970s, as we saw above, low cost textiles producers, notably in Eastern and Southern Europe and in Asia, increased their textile and clothing exports to the advanced industrial capitalist countries (AIC). Although this engendered some loss of forward linking clothing markets for textile producers in the AICs, strength in synthetic textiles and growing exports of textile machinery reduced the impact of rising imports on the textile trade balances of the advanced industrial countries. (Shepherd: 1983,p.28; Gatt: 1984,p.29). Offsetting exports of textile machinery were particularly important for Germany and Japan (Table 15).

Table 15

As a stimulus to textile restructuring,increasing intra-AIC trade in textiles (Table 16) proved to be atleast as important a factor as imports from the Third World. Indeed, as late as 1980,'low-cost'imports accounted for a remarkably small share of total cotton textile consumption (by quantity) in the advanced industrial capitalist countries---5 percent in the US, 17 percent in Germany, 18 percent in France and 29 percent in the UK (see Table 16 below). Even clothing imports from the Third World have not made the kind of inroads into AIC markets that are often imagined. In the case of France, for example, in 1980, imports from Third World countries accounted for only 5.8 percent of the French clothing market (Godet & Saussay: 1984,p.27). An analysis of the relationship between production ,consumption and trade in twenty- two textile and clothing categories subject to restriction by the EEC over the period 1978-1981,moreover,revealed that

> In 9 out of 22 categories, imports from MFA developing suppliers declined, along with production. In five other categories MFA developing imports increased, but this increase was only minor, or marginal, compared to the decline in production, which principally reflected the fall in con-

Table 15
Total Exports of Textile Machinery (SITC 7171)
from the major producing countries:selected years

(million dollars)

	US	Japan	France	FRG	Italy	UK	Switz.	Total[a]	Total[b]
1962	158	74	49	257	67	180	132	917	3585
1967	168	106	82	454	127	220	204	1361	4699
1972	211	233	191	1109	225	367	411	2760	5963
1977	315	502	294	1445	381	369	782	4087	4809
1982	431	672	278	1652	534	422	1065	5054	5054

a. Total in current dollars
b. Total in constant 1982 dollars

Source: GATT(1984),Appendix Table A.24

> sumption. Only in three categories was the rise in imports from developing MFA suppliers comparable to the decline in production. (UNCTAD: 1984b, 28)

Similar results were obtained with U.S. data which showed that "...in 37 of the 40 categories for which production declined, this was principally linked to the fall in consumption." (UNCTAD: 1984b, 28). Despite their relatively small share of consumption in the advanced industrial capitalist countries, imports from the Third World were increasingly subject to restrictive measures imposed under the aegis of the multifibre arrangements negotiated in 1972, 1977 and 1981 (See Appendix One for details).

Table 16

In addition to protectionism, the mounting pressure of textile competition from both low wage and advanced industrial countries and the signs of impending economic crisis--declining rates of productivity growth and profits, rising rates of inflation and unemployment-- increasingly evident towards the end of the 1960s, stimulated governments and firms in the advanced industrial capitalist countries to devise new textile restructuring strategies. Both the timing and nature of these strategies varied across countries and were functions of the relative cost differentials, technological levels, firm sizes and industrial structures prevailing in the textile industries of these countries and the historically structured relationship of unions and firms to each other and to the policy-making process. While space does not permit an analysis of these strategies here, liberalization of the global textile regime in the short and medium term depends, in part, upon the extent to which textile industries in the advanced industrial countries have transformed themselves behind these protective barriers. In addition, of considerable importance for the development and restructuring of Third World textile industries, is the nature of that transformation and the new opportunities for or constraints on Third World textile production, technological development and trade which it has created. The following paragraphs touch briefly upon these questions.

4.1. The Textile and Clothing Industry

The openness of the Dutch economy and its trade dependence has traditionally put a premium on the maintenance of international competitiveness by Dutch firms. The Netherlands was, thus, amongst the first of the EEC-nine to begin a

Table 16

Import Penetration[a] in Selected OECD Countries in the Cotton Industry

	1962	1969	1976	1978	1979	1980
Germany						
I/C	12	22	49	59	63	59
LCI/C	1	4	14	16	17	17
X/P	13	19	50	59	64	59
France						
I/C	6	25	51	58	61	59
LCI/C	1	7	15	16	17	18
X/P	25	22	36	48	50	46
UK						
I/C	31	35	56	65	68	74
LCI/C	19	23	31	30	31	29
X/P	15	17	32	36	39	51
USA						
I/C	4	5	6	7	5	7
LCI/C	2	3	5	..	3	5
X/P	1	3	5	4	5	6

Notes: a Percentage based on weight of production

Key: C: Consumption = Production+Imports-Exports I: Imports (including from EEC member-countries) LCI: Low-cost imports i.e. imports from developing countries, Southern Europe (except Italy) and centrally planned economies X: Exports (including to EEC member-countries) P: Production

Source: Shepherd: 1983, p. 28.

vigorous and conscious programme of textile restructuring. While textile production was still growing rapidly in other advanced industrial countries, the index of textile production in the Netherlands rose by only 6 percent in 1973 over 1963 and employment fell by 39.6 percent (Table 17) During the 1970s the index of textile production declined by 23 points and employment dropped a further 34.4 percent. With these dramatic changes, the Netherlands has moved quite far in restructuring its textile industry reducing, thereby, pressures from both capital and labour for continued textile protectionism.Nevertheless even here when the state's active role in textile adjustment was cutback and continued increases in unemployment were experienced across the economy, labour unions and most employers adopted more energetically protectionist positions. However there is some indication that the active period of textile restructuring, in particular the specialization in finer yarns and fabrics, did open new trade opportunities for independent Third World producers (Langdon:1981) .

Table 17

Textile restructuring in Germany also began in the 1960s when a number of leading firms adopted a "...mass-market strategy aimed at staying cost-competitive in the domestic market for standardised cloth through economies of scale and long runs." (Shepherd:1983,pp.36-37). A rapid rise in textile output in 1973 over 1963, accompanied by a substantial decline in textile employment signaled both a modernization of plant and equipment and the emergence of international subcontracting as key restructuring strategies.(Frobel, Heinrichs and Kreye:1980) The latter, operating primarily in the clothing industry,contributed to the success of the mass market strategy in textiles during the 1960s. With rapidly rising real wages and increased textile and clothing imports in the 1970s practicioners of the mass market strategy either collapsed or adopted a strategy of specialization in quality fabrics and fashion goods, household and industrial textiles. This was reflected in rising rates of investment in new machinery and equipment. Output in the German textile industry began to decline in this period but fell far less than textile output in France or the UK. Employment, however, dropped by 29 percent.(Table 17). With the exception of the MFA negotiations in 1977, Germany has tended to favour a more liberal trading regime in textiles.(Dolan:1983, Aggarwal:1983).

The contrast with France is evident from the statistics presented in Table 17 above. Between 1963 and 1973 textile production in France rose by 15 % but employment fell by only

Table 17

Differential Patterns of Textile Restructuring Among Advanced Industrial Capitalist Countries

	Netherlands	Germany	France	UK	USA
Change in the Index of Production: 1973/63	+ 6	+24	+15	+10	+44
Change in the level of employment: 1973/63 (percent)	-39.6	-24	-11.5	-22.6	+36.5
Change in the Index of Production: 1980/73	-23	- 7	-11	-30	- 3
Change in the level of employment: 1980/73	-34.4	-29	-24.4	-29.4	-17.7

Source: calculated from data in Toyne:1984,Tables 5.13, p.89 and 5.15,p.92.

11.5% - suggesting far less modernization of plant and equipment than in either Netherlands or Germany. From 1973 to 1980 although textile production in France declined somewhat more than in Germany,employment fell only 24%. Given that French textile restructuring in the 1960s was characterized by a pattern of growing concentration with relatively little modernization or rationalization, employment has tended to remain proportionately higher in France than in other EEC countries. Recent government policy measures,moreover, seem designed to maintain employment in this industry. Thus in March 1982 the Mitterand government proposed a reduction in social security charges for firms that undertake new investments which are job -maintaining or job-creating. This suggests that pressures will continue in France for both modernization, the preferred strategy of a number of larger firms, and protectionism the strategy advocated by many smaller firms and unions (Mytelka:1982; Mahon and Mytelka: 1983). A recent survey of two German and one French textile manufacturer,moreover, revealed that although two of these firms had engaged in offshore production in the past, neither intends to increase this activity.(Toyne:1984,142).

Like France, the UK textile industry initially withstood modernization by relying on its colonial markets. With Courtaulds' decision to enter the cotton textile industry in the 1960s, a new emphasis on modernization and concentration aimed at mass market textiles was adopted. Unlike the German pursuit of a mass market strategy within the context of relative trade liberalization, large British firms sought and secured limitations on textile imports. (Shepherd: 1983,pp. 43-46). Despite the UK's relatively low wage level, a lack of attention to marketing and innovation, coupled more recently with a sharp decline in domestic purchasing power, have kept the British textile industry under pressure further reducing the likelihood that either British business,labour or government will favour liberalization of textile trade in the short term.

The US textile industry began its restructuring phase by relocating to a number of southern states where a smaller proportion of the textile work force was unionized and labour costs were cheaper. Integration and rationalization of production through long production runs also contributed, in the 1960s, to the relatively high levels of productivity which the US textile industry exhibited in this period. As the consumption of synthetic fibers rose in the 1960s, US preeminance in synthetic textile production, favoured by cheap feeder stocks, gave an added impetus to the continued growth of the US textile industry. Both textile production and employment,thus, rose dramatically in this period. Throughout the 1970s, the relatively low US hourly labor costs and relatively high labour productivity resulted in labour costs per unit of output that were considerably lower than those in Western Europe and not much different from those in Japan. Using the USA as the basis for constructing an index of unit labour costs (USA=100), in 1979 unit labour

costs were nearly twice the American level in Germany (193) and 50 percent higher than the US in France and the UK. (Toyne:1984,p.100).

By the mid-1970s the US, however, had begun to lose its relative productivity lead to European and Japanese textile manufacturers who, despite having somewhat lower rates of investment in their respective textile industries, appear to be modernizing at a more rapid rate than their US counterparts. Thus although installed spinning capacity in the EEC had fallen from 235 million spindles in 1963 to 92.2 million in 1981, the number of open end rotors totalled 3.4 million there as compared with 2.6 million in the United States where installed spinning capacity remained well above that in the Europe or Japan (see Table 11 above).Similarly in weaving, the EEC reduced the number of looms installed from 469,500 in 1963 to 142,700 in 1981 but in the latter year 22.6 percent of these looms were shuttleless looms as compared with a tiny reduction in installed weaving capacity in the United States and a far smaller proportion of shuttleless looms (see Table 11).

The pressure of rising imports was also taking its toll . Under these conditions, American firms began to pursue a strategy of delocalized production whereby segments of the production process with low value added or high labour content were relocated to low wage countries or economic free zones,such as the border- industry sector in Mexico. The attractiveness of this option,however, has apparently diminished as a recent survey of eight U.S. textile firms revealed that neither of the two firms in this group that had previously engaged in offshore production intended to enlarge these operations and there was "...absolutely no desire to locate offshore among the firms that have never tried it." (Toyne: 1984,136). One might suspect that this disinterest was related to the lack of a US tariff item permitting the export of uncut fabrics for additional work (cutting and sewing) and the import of finished apparel with duty paid only on the value-added overseas, as the advantage is no where near as great when,in conformity with US tariff provisions,only cut fabrics can be exported for additional work. Yet, in Germany, where such a tariff item does exist there is a similar disinclination to pursue a delocalization strategy further, as we saw above.

In addition, the American textile industry sought and obtained relatively high levels of protection under the MFA (see Appendix One and Balassa:1984). But here,too,the eight textile firms surveyed by Toyne et.al appear dissatisfied with the results,alleging that the US government has not enforced the MFA 6 percent limit on growth of imports with sufficient vigor . For these firms, foreign competition,most notably from China, Hong Kong, Taiwan and Korea,represents the most serious future threat to the US textile industry (Toyne:1984,131). In September,1984 new criteria for determining a garment's country of origin were implemented.

Under the new rules nearly $300 million worth of "Made in Hong Kong" knitwear will be disqualified since most of the territory's woolen sweaters are produced from unfinished components knitted in southern China. The United States, moreover, has

> significantly increased its requests for curbs on categories of garments not under quota restrictions. There have been 24 such "calls," as they are known in the industry,against Hong Kong in the last year; worldwide, the United States has requested well over 100.(Int'l Herald Tribune,5-11-84,10).

It was in response to the rise of Japanese textile exports that the 'voluntary export restraints' and 'Orderly Marketing Arrangements' characteristic of the 'new' protectionism in world trade, first made their appearance. Yet the Japanese textile industry,too, has begun to experience difficulties. Just as the share of textiles in Japan's total merchandise exports were falling from a high of 29.3 percent in 1955 to 17 percent in 1963, 6.6 percent in 1973 and down to 3.7 percent in 1982 (GATT:1984,Appendix A.7), textile imports as a share of domestic demand were growing from 0.5 percent in 1960 to 18.3 percent in 1978 (Toyne:1984,p.116). Under pressure, Japanese textile manufacturing and marketing firms began to fail--over 1300 such failures in 1977 and the level of endebtedness rose to $1.3 billion. (Toyne: 1984, p.116). Rising wages in a tight labour market, "...sluggish demand caused by a slackening in consumer spending on clothing, shrinking exports and ballooning imports,which were brought about by an intensifi- cation of competition from neighbouring developing countries and the sharp rise in the value of the yen" (Toyne:1984, p.115) all contributed to the need for textile restructuring in Japan in the 1970s. As in in other advanced industrial countries,textile firms were initially encouraged to move into higher value added textile products in order to avoid direct competition with the mass market products of the principal Asian exporting countries and to delocalize production through direct foreign investment in overseas textile plants and/or through the sale of plant and equipment and management skills to new Asian, African and Latin American producers. More recently, as small textile manufacturers have been unable to make the necessary adjustment and as "...trends in Japan's textile exports... have indicated that the Japanese textile industry is internationally competitive primarily in non-price areas for high-quality products" (Toyne:1984,p.119) the Japanese government has encouraged the adoption of strategies to reduce costs and promote greater flexibility through increased automation in the textile industry. The attentiion paid to modernization of the textile industry during the 1970s is evident from the data presented in Table 12 above. With regard to the apparel industry, robotization is seen as

the means to increase flexibility of adjustment to changing tastes and a desire for individualization of products at the same time as it reduces costs and labour requirements and To encourage a move in this directions, in 1981 the Japanese government announced the initiation of a $70 million study on the potential for robotiziation in the Japanese clothing industry. (Toyne:1984,p.119).

In sum, textile restructuring accelerated in the 1970s in all of the advanced industrial capitalist countries. While the absence of detailed empirical studies precludes an assessment of the extent and nature of the transformation which the textile industries in these countries have undergone,there is no doubt that the pressure on prices and profits coupled with the growing emphasis on product differentiation which helped to generate the textile crisis of the 1970s has not yet abated. Firms will thus be obliged to seek new growth strategies. Among these strategies, further restructuring activities aimed at greater flexibility of production through new computer assisted design and production techniques, increased machine versatility and speed ,new product development and improved product quality can be anticipated over the next decade. The speed with which new innovations are diffused,however, depends in large part upon the broader economic context, notably the prolonged recession in Europe and the uncertain recovery in the United States,since further textile restructuring will require a more bouyant economy both to generate new employment possibilities and to absorb the increased output which higher performance equipment makes possible and which amortization costs make necessary. Given the existing difficulties of the textile industry in many of the advanced industrial capitalist countries, both modernization and rationalization strategies will be seen by politically powerful forces in the society to require continued protection. This is particularly true, if as Woolcock has argued, the development of protectionism in textiles and clothing has been more the result of political expediency than of a clearly defined policy in many of the advanced industrial capitalist countries (Woolcock:1982). Where job preservation in the textile industry is coupled with a strategy of modernization, as in the Belgian proposal to provide financial support to textile mills which in the course of restructuring retain at least 90 percent of their labour force (Toyne:1984,p.125), a rationale for continued protection is provided. With these points in mind there appears to be little likelihood that negotiations over the short term will result in a significant liberalization of north-south trade in textiles.

4.2 The Synthetic Fiber Industry

Until the 1970s the development of synthetic fiber production provided a major stimulus to the continued growth of the textile industry in many of the advanced industrial

capitalist countries. In the 1970s,however, the rapid expansion of synthetic textile production throughout Western Europe,the emergence of a synthetic fiber industry in Eastern and Southern Europe and in a number of Third World countries, notably Korea, Taiwan, Mexico and Brazil ,the dramatic price rise in feeder stock and the sharp cutback in final consumer demand, created a serious problem of excess capacity in the Western European synthetic textile industry. This was reflected in the fact that between 1974 and 1980 the average capacity utilization of all synthetic fibres plants in Western Europe was only 68 percent.(Shaw & Shaw:1983,p.151). Efforts to close uneconomic plants by Akzo in Belgium, Rhone Poulenc in France and Montedison(Montefibre) in Italy, moreover, were frustrated in the mid-1970s by government policies to preserve employment,reinforced by union opposition. Many of these plants, thus, continued to operate either through heavy state subsidization or through nationalization.

In 1977 the 10 major European synthetic textile producers which collectively controlled over 90 percent of Western Europe's production capacity (Shaw and Shaw:1983,p.151) decided to form a cartel with a view to reducing capacity, and to maintaining prices and market shares (Dolan:1983). Working closely with Etienne Davignon, EEC Commissioner for Industrial Affairs, the firms developed a rationalization programme which entailed a reduction of capacity by 15 percent, a sharing of this capacity through a series of national quotas and an agreement to refrain from creating any new capacity until 1981. Although in this form, the cartel was not sanctioned by the EEC commission, it was permitted to remain in existence until a legal means of circumventing EEC competition regulations could be devised. This was achieved in a redraft of the agreement in which a set of bilateral purchasing contracts were substituted for the controversial national quota scheme. "With this mechanism, companies could purchase the goods from other firms and then resell them on the open market." (Dolan: 1983,p.596). The cartel was renewed in 1981 and under the new agreement, drawn up in October 1982, a further reduction of 17 percent of total capacity was planned.

By looking at the overall reduction in output, the number of plant closures and the nature of specializations which have been adopted by European synthetic textile firms it is possible to arrive at a partial assessement of the extent to which the European synthetic fibers industry has been restructured under this cartel. Eurostat industrial production figures reveal that synthetic and artificial staple fibres production measured in tons, fell by 15.4 percent from 1976-82. Synthetic and artificial continuous yarn production declined by an even larger percent,26 percent,over the same period. (Eurostat:1984). The reduction in output thus appears substantial.

To some extent this reduction in output may have resulted from a series of plant closures and greater product specialization. Whereas in 1975 the thirteen major companies

in the EEC operated 109 plants by 1981 that number had falled to 87.(Shaw and Shaw:1983,p.159). In addition, a number of firms entirely abandonned certain product lines. Hoechst and Monsanto ,for example,withdrew from the nylon market, and Snia Viscosa, from the polyester staple market(specializing instead in polyester filament). Bayer was in the process of withdrawing completely from the polyester market, Du Pont from the polyester filament area and Du Pont and Rhone Poulenc from the acrylic sector. A number of companies were also specializing within product categories--Montefibre,Bayer and Du Pont within the nylon sector,with the latter concentrating on specialist end uses such as carpet fibres and ICI and Rhone Poulenc specializing within the polyester sector. In some cases a projected investment was not made. Thus Courtaulds abandoned a plan to produce polyester staple at its new plant in the Republic of Ireland.(Shaw and Shaw:1983,p.161-163). But despite the greater degree of specialization and number of plant closures overall capacity in noncellulosic fiber production remained high. In France, for example, production in 1982 totaled 190 thousand metric tons or 73.8 percent of capacity (Textile Organon:June 1983,p.84). In Germany production in 1982 was 78.3 percent of capacity, and in the UK it was 60.8 percent of capacity.(Textile Organon: June 1983,p.84) Given the rather slow growth in synthetic fiber consumption in recent years and the continued financial difficulties being experienced by the textile division of a number of the large synthetic textile producers, the reduction in synthetic fibres and yarn output does not necessarily imply a potential new export market for third world synthetic textile producers.

Like its European counterpart, the Japanese synthetic textile industry, so carefully nurtured during the 1960s, (Ozawa:1980) was also plagued with excess capacity by the 1970s. In part this problem was overcome through direct state intervention when MITI, in 1977, ordered cutbacks in domestic production of nylon and polyester filament and acrylic and polyester staple following the failure of a producers' cartel to reach agreement on a rationalization strategy for the industry (Ozawa:1980,146). Between 1976 and 1982 Japanese noncellulosic fiber production, however, rose from 1140 million metric tons to 1304 million metric tons (Textile Organon:June 1983,p.85). This hardly makes room for increased imports of synthetic fibres in the near future.

More importantly for the development of this industry ,however,is the new strategy based on the exploitation of technological advantages that synthetic fiber producers such as Toray and Mitsubishi Rayon have adopted (Giget:1984). In the case of Toray, this has entailed a dramatic reduction in their directly textile- relevant activities and an emphasis on advanced composite materials for which client industries are far more numerous. Thus the forward linking markets for their carbon fibre production include industries as diverse as sporting goods,machinery, energy, aerospace and automobiles . This should ultimately give these firms greater

flexibility and move them still further out of the textile market.

In the short term,therefore, it appears as if the only major market for increased Third World synthetic fibres,yarns and textiles is the USA. Much more work needs to be done, however, before a complete assessment of the market for man-made textile products is possible.

5.0 TEXTILE RESTRUCTURING IN THE THIRD WORLD

Textile production has historically played an important role in economic growth. It sparked the first industrial revolution and the relatively low capital requirements, limited scale-economies and simplicity of technology in this industry, enhanced its role as a leading sector in other early industrialization processes as well. Even today, with the exception of manmade fibres, the textile industry remains relatively more labour-intensive than other industries and until quite recently its technology was stable, mature and hence easily accessible. These characteristics, coupled with the availability of cotton and the importance of this industry in both an export-oriented development strategy and one designed to meet basic human needs, have made textiles a pre-eminent industry for transfer to the Third World.

In some of its new sites,notably Korea, Taiwan, Hong Kong, and to a lesser extent India, large-scale mechanized textile production became a dynamic element in the growth of domestic industry. Overtime textile firms in these countries became internationally competitive and this further stimulated the growth of output and the establishment of domestic economic and technological linkages--including to the textile machinery sector. In much of sub-saharan Africa,in contrast, the textile transfer process did not give rise to efficient production within a dynamic industrial sector. Elsewhere initial successes faded as domestic firms failed to adjust in time to changing patterns of international competition, technology, tastes and incomes. In such cases textile restructuring appears to have become as much of a necessity as it is in the advanced industrial countries.

With a view to situating the Latin American case in a broader context than that of the advanced industrial countries alone, the following sections briefly review recent textile adjustment strategies in a number of Third World countries. Section 5.1 looks at cases of successful export-oriented textile and clothing development, of which Korea, Taiwan and Hong Kong are the best known. Section 5.2 outlines some of the problems that have surfaced in many Latin American and Asian countries using as examples the cases of India, Pakistan and Colombia, where,after a promising start, the textile and clothing industries are not keeping pace with changing patterns of international competition or domestic market needs. This section thus provides a checklist to guide a future study of the Mexican textile industry.

5.1 Korea, Taiwan and Hong Kong

Taiwan, Hong Kong and Korea have relatively small domestic markets when compared to countries such as India, Pakistan, Mexico and Colombia. Collectively their population is less than two and a half times that of Colombia. While the domestic market has been important in Korea and Taiwan, dynamic growth in those parts of the textile and clothing industry benefiting from economies of scale have,thus, depended upon access to export markets. What is particularly remarkable about these three Asian countries,therefore, has been their ability to adjust by moving from textiles to clothing, or in the case of Taiwan to knitwear and synthetic fibers, during the 1970s as domestic wages rose and protectionist barriers deprived them of markets. India, Pakistan and Mexico, in contrast, have not moved downstream into clothing exports on any significant scale and appear increasingly to be losing their share of the textile export market to the People's Republic of China, Korea and the Province of Taiwan.

Much of the textile industry in Korea, Hong Kong and Taiwan is domestically owned but subcontracting by American, Japanese and German manufacturers and trading companies was extensive in the clothing industry. In the case of Korea, for example, some 60 percent of clothing exports originated in subcontracting commitments (UNCTC:1984,Table 6.2). Direct foreign investment is also very limited in the Indian textile and clothing industries. It exists on a minor scale in the organized sector in Pakistan and is most extensive in the Mexican manmade fibres sector. Considerable use is also made of licensing in the fibre industry in some Latin American countries and to a somewhat lesser extent in the Indian and Pakistani mill sector. In contrast to the big three Asian exporters, subcontracting is relatively limited in India and Pakistan through it exists on a considerable scale in the Mexican clothing industry (UNCTC: 1984,Table 6.2). Although each of these cases merits an indepth study, lack of time and space preclude anything more than a very brief overview here.

Korea has passed through several successive phases in the development of its textile and clothing industries. Initially an import- substituting industry whose domestic market was shielded by non-tariff barriers,the Korean textile industry has become a leading foreign exchange earner. Korean textile firms,when first reoriented towards the export market, used semi-automatic looms manufactured locally to produce mass textile products cheaply. This gave them a competitive edge which in the context of rising textile and clothing demand in the AICS,relative trade liberalization and domestic monetary and fiscal reforms,stimulated textile exports.

In 1967, Korean policy changes, notably the adoption of a Provisional Law for the Adjustment of Textile Facilities

which emphasized the use of new equipment as a means of modernizing the industry,coupled with tax and tariff provisions,however, induced local manufacturers to import more sophisticated textile machinery before such machinery was actually needed to improve Korean competitiveness. The development of the local textile machinery industry stagnated until a policy reversal permitted it to intensify its technological capacity and manufacture improved machinery for the domestic industry. By the late 1970s,however, it had become desirable to promote modernization of the textile industry and a special fund for this purpose was created in 1979. A year later a semi-official organization, the Textile Industry Federation was formed. With a $14 million budget, half subscribed by the state and half by private firms, the Federation is intended to help firms improve their international competitiveness by modernizing plants and equipment. Toyne:1984,121-123).

Unlike the textile industry, the development of Korean synthetic fiber production was overwhelmingly a function of Japanese investment and grew as an import-substituting industry behind high tariff walls. "One reported result of this protection has been the lack of Korean fiber-producing plants large enough to enjoy major economies of scale. Consequently the Korean textile industry has been burdened with relativelyhigh-priced fibers."(Toyne:1984,p.122). Over the past few years ,Japanese investors have sold most of their shares in Korean synthetic textile production to nationals. Toray, Teijin and Asahi,however, continue to retain minority shares in such major synthetic fiber producers as Kolon Industries (Nylon 6 and Polyester yarn), Tong Yang Polyester (Polyester yarn), Sunkyung Fibres (Acetate yarn and tow and Polyester yarn and staple) and Cheil Synthetic Textiles Company (polyester yarn and staple) (Textile Organon:June 1983,p.99). The current five year plan (1982-86) targets textile exports to be 20 percent of total exports by 1986 with the Korean industry expected to capture 10 percent of the world market in that year. Much of this growth is predicated upon considerable expansion of manmade fibre capacity--"...a threefold increase in 1976 chemical fibre capacity by 1986; a fourfold increasein polyester and a threefold increase in acrylic production by the latter date. The 1986 target is 95 percent self-sufficiency in synthetic textile fibres (82 percent in 1976)"(UNCTC:1984,Chap.VI,14). In addition, the plan pushes both capital-intensive production and higher value added products given "the vulnerability of the labour-intensive side of textiles with wage cost inflation recently running at 30 percent per annum." (UNCTC: 1984,Chap.VI,14). Finally the Korean strategy includes a move away from exports to quota-area countries.

Taiwan's textile industry dates to the 1950s when, with state support, an import-substituting apparel industry was developed . Subsequently it was linked to a textile fabric industry and finally, through Japanese foreign investment to a man-made fiber industry. Like Korea the Taiwanese textile industry is highly protected but the fiber producers receive far less protection and are "therefore forced to sell fiber to the rest of the local industry at lower costs. This helps hold down the costs of woven goods and allows that segment of the industry to be more competitive in the world market."(Toyne:1984,p.122). It also contrast markedly with the situation in Colombia , as we shall see below.

In the 1960s, high volume, low and medium-priced textiles were marketed domestically and abroad. The USA was Taiwan's major apparel market while its exports of yarns and fibers went principally to Hong Kong, Japan and Singapore. (Toyne: 1984,154). With increasingly restrictive barriers against Taiwanese imports first in the US and then in Europe and with mounting competition from new low-cost producers, Thailand, Indonesia and the Philippines, Taiwan began re-orienting its trade towards the Third World (shipments rose from 10 to 30 percent over the 1970s) and towards higher value-added segments of the industry. The modernization of the Taiwanese textile industry accelerated in the late 1970s and early 1980s. Like Japan and South Korea ,this was ,in part, due to the fact that"...Taiwan's success in developing other, relatively higher-technology industries (e.g. electronics) resulted in a severe labor shortage and spiraling labor costs. Monthly factory wages doubled between 1976 and 1980..." (Toyne: 1984,155). Large investments in labour-saving machinery are now planned for the textile industry and a shift into the capital-intensive knitwear industry is already evident. Trade diversification is also being pursued as recent efforts to market in Eastern Europe demonstrate (UNCTC:1984,Chap.VI,22).

Over 80 percent of Hong Kong's textile-related exports are garments of which, in value terms, 50 percent were cotton based products, 30 percent were based on chemical fibres and 20 percent were based on wool and other fibers (UNCTC: 1984, Chap.VI, 17). Hong Kong's garment industry is highly dependent on imports--manmade fiber imports from Japan, Korea and Taiwan and cotton fabric from China. As a labour- intensive industry, the clothing industry makes a major contribution to employment in Hong Kong. Efforts to cut Hong Kong's quotas and/or to limit still other of its textile and clothing exports have thus pushed Hong Kong manufacturers into greater efforts to increase the unit value of garment exports and between 1979 and 1981 export value rose by an average of 25 per cent per year (UNCTC: 1984,Chap.VI,18). This" drive to upgrade production ...has served to extend the influence of clothing TNCs, namely the production in Hong Kong of a

growing proportion of clothes designed by established European , US and Japanese names such as Yves St. Laurent, Dior, Calvin Klein and Kensai Yamamoto...[in addition, however, a number of Hong Kong Manufacturers are extending] the experience gained in producing to "designer label" standards to the production of Hong Kong brands" (UNCTC: 1984,Chap.VI, 19). With Hong Kong progressively abandoning the lower quality ends of the garment spectrum newcomers may be able to take its place in the medium and long term. In the short term,however, as higher demand in the US and EEC pushes Hong Kong to its quota limits it is doubtful that many other Third World producers can step easily in to fill the breach as lower quality levels, higher prices, a lack of marketing know-how and insufficient contact with trading companies in the AICs reduce the possibilities of substituting their products for the increasingly restricted Hong Kong imports.

As the above indicates, each of these three East Asian countries is consciously pursuing a programme of textile restructuring. While the specific contents of these national strategies differ,in all cases, care is being taken to specialize in product lines which build upon existing areas of strength whether these be cheap inputs,as in Korea's expansion of synthetic fiber production, or special manpower resources,as in Hong Kong's design and quality control capabilities , to promote domestic technological mastery in design or production and to diversify export markets. Attention is also being paid to the development of state policies which encourage efficient production and funds are being made available to cushion the financial costs of major structural change.

5.2 India, Pakistan, and Colombia

If the three major East Asian textile exporters seem particularly prescient in their pursuit of textile restructuring strategies, those considered in this section appear to have been overtaken by events. Their diminished ability to compete internationally or meet domestic market needs,however, has been a stimulus to further thinking. While each national case is distinctive, many of the problems which the textile and clothing industries face are common to several of these countries. In the absence of recent detailed case studies, this section is limited to a summary of these problems and the provision of data for illustrative purposes only. Not all of these problems will be common to the Latin American textile and clothing industry but they provide some guideance for the design of a more thorough analysis of the Latin American industry at some future date.

In many of the Third World countries in which textile and clothing industries are in difficulty,firms have turned to products and processes in which they cannot or can no longer compete (de Vries & Brakel:1980,40). This was true,for

example of the Ivory Coast's attempt to produce and export denim, a fabric with high technical specifications and economies of scale (Mytelka:1981,75). It also applies to the continued Indian emphasis on cotton fibers and fabrics without attention to the upgrading of poor quality cotton inputs (Lall:1984,37). Product choices cannot,however, be made without a careful assessment of domestic needs as well as international export possibilities. Yet how these needs and possibilities are seen is ,in turn,shaped by a combination of factors amongst the most important of which are government policies, international consumption norms, domestic patterns of income distribution and managerial capabilities.

A similar observation must be made with respect to the question of efficiency. In most of the Third World countries where the textile and clothing industries are in difficulty, the X-efficiency of plants ,that is, the productivity of existing factors of production, is low. Machine efficiencies in Pakistan, the Philippines and Turkey, for example, were often only 75 to 85 percent of comparable international standards and unit costs were further reduced through under-utilization of capacity, poor quality control and inadequate attention to maintenance (de Vries & Brakel: 1983,39). In India "[y]arn output per spindle installed has fallen from 61.3 kg. in 1963 to 48.1 kg.in 1981,despite the fact that... some one-third of spindles were less than 10 years old (and so had higher operating speeds)" (Lall: 1984, 37). Comparing yarn productivity per spindle in India and Hong Kong reveals, moreover, a 32% higher productivity for the latter (Lall: 1984,38). As in the case of product choice, low levels of efficiency are caused by a combination of factors. These include-- low levels of labour productivity, domestic oligopolistic price setting, high levels of tarrif protection and other government policies which induce inappropriate choices of product, process or final markets at the same time as they insulate firms from the consequences of a failure to become competitive.

Primary amongst the factors of production whose productivity differences have been shown in recent studies to account for a major share in the cost differential between the three East Asian countries described in section 5.1 and the group of countries considered here is labour productivity. Labour productivity, that is output per worker or per hour worked, should not,however, be confused with wages, that is, the cost of labor per hour worked or per unit of output produced which alone is of far less importance in explaining competitiveness. Evidence of lower labour productivity abounds. Thus output per worker in the garment industry appeared to be 30 to 50 percent higher in East Asia, for example, than in Colombia (Morawetz:1980,197. "Pakistan's labor productivity in spinning, weaving and finishing is only about 15-20 percent of that achieved in Western Europe."(de Vries & Brakel:1980,39). Some of the explanation for higher

productivity may lie in the use of newer and/or more efficient, in an engineering sense, machinery. As we saw above in the discussion of X-efficiency and as the evidence on labour productivity in identical spinning and weaving plants in Japan, Germany, Korea. Brazil and India (see p.30) suggests,this may not be the principal explanation. Over-capitalization,moreover, may ,in fact, be more of a problem than the use of somewhat outdated but well maintained ring spinners and looms, especially where the more sophisticated machinery is costly, giving rise to a financial burden on the company and it is imported with all that this implies for domestic integration and the balance of payments.

An alternative explanation for differences in labour productivity is suggested by Morawetz. "Labor productivity in the clothing industry",he points out, "tends to rise over time not as a result of quantum jumps in the type of machinery used but rather through the implementation of large numbers of small improvements in particular operations or in the organization of the production process." (Morawetz: 1980, 108). This points to the crucial role which management and especially middle-level management(including engineers and technicians) play in improving labour productivity (Morawetz: 1980,108).

But managers operate in a broader environment which may induce or constrain efforts to master technology; to make minor improvements and innovations which reduce costs, improve or differentiate products ; to promote high levels of maintenance and quality control. This environment includes pressures for competitiveness arising from within the domestic market or failing that, from the need to compete in international markets. Such pressures are,in part, a function of the domestic industry's structure but are also shaped by government policies. In the case of India, government policies have distorted the environment within which the choice of technology must be made. Thus in order to preserve the decentralized textile sector, beginning in 1956 the government imposed a freeze on the number of looms in the organised mill sector except in the case of export-oriented production. "Since few firms were willing to invest in new capacity exclusively for export....the total number of looms in the cotton mills was 211 thousand in 1983 as compared to 203 thousand in 1956 (Lall:1984,15). The freeze,however, did not apply to the looms' productive capacity. Under these conditions, the most dynamic firms were "<u>forced</u> ...to move to highly-advanced, capital-intensive techniques in order to expand" while the bulk of the firms simply continued to operate their older looms,most of which were in a very poor state of repair (Lall:1984,15-16). With a view to protecting the domestic cotton industry, Indian government policies also retarded the use of synthetic fibers in the organized mill sector. This limited the range of textile fabrics which the modern mill sector could offer and affected its ability to compete in international markets in which synthetics were

increasingly supplanting cotton except in the simplist textile products.(Lall:1984,24-25). In both instances government policies have impeded the kind of continuous adjustment which might have rendered the Indian textile industry more competitive in the 1980s.

Differences in costs as between the Asian textile exporters and the set of countries discussed here, may also be due to differences in input prices. Thus in the case of Taiwan, Toyne suggested that less protection for fiber producers obliged them to price their fiber for local manufacturers at world-competitive prices thus lowering total costs. In Colombia just the reverse has occurred with fabric overpricing to domestic garment manufacturers. Wheras in

> ...East Asia, garment exporters are assured of duty-free access to top quality fabrics at world prices [in] Colombia, despite the fact that local textile firms export fabric and have done so for over a decade, the prices that clothing exporters have to pay for domestically-produced fabric are 50-100 percent above world levels. In cotton cloth, this is because the four large textile firms use their oligopoly power behind high protective walls to raise prices. In synthetics, the problem begins further back in the production chain with the too-small plants for petrochemicals and synthetic fibers that also enjoy high protection and produce at high unit costs....The garment exporters' logical solution to this overpricing problem would seem to be to import fabric under the Vallejo Plan drawback arrangement, and almost all firms that export to the difficult markets do so; but administrative problems and delays reduce the scheme's value....Together , they effectively nullify and often reverse the one clear advantage that Colombia has over East Asia in garment exporting:the ability to offer shorter lead and turnaround times. (Morawetz:1980,198).

From the above it is clear that a well designed restructuring policy requires a thorough knowledge of the domestic industry--its strengths and weaknesses as well as an understanding of the evolution of global trends in trade and technology. Within the domestic context,moreover, attention must be paid not only to the micro-economic level of the firm but to an assessment of the environment within which firms make crucial choices which affect their competitiveness.

6.0 DIFFERENTIAL WAGE RATES, TEXTILE DELOCALIZATION AND THIRD WORLD RESTRUCTURING

In neoclassical economics relative factor proportions are a central element in an explanation of both the pattern of specialization within the international trading system and hence the location of producing units across politically separate segments of that system as well as the choice of technique within those producing units. Amongst those factors believed to affect the choice of location, specialization and technique, the cost of labour relative to capital is often regarded as determinant. Thus GATT,in its recent study Textiles and Clothing in the World Economy argued that if we assume a continued upward pressure on wages in the advanced industrial countries relative to the Third World and a

> ...relatively high degree of international mobility of capital...to keep differences in capital costs between countries from widening substantially, then there will be a continuing shift in comparative advantage in low-skill labour-intensive industries away from the developed countries...(Gatt:1984, 170).

Where the choice of location, specialization, and technique is made within the confines of a large, trans-national firm, the influence of wage differentials in the decision process is brought seriously into question (ILO: 1984,27). The relative cost advantage which Third World countries possess by virtue of their lower wages and social charges is further eroded in situations in which capital and knowledge-intensive techniques of production are rapidly diffusing,as appears to be the case in the textile and clothing industries of the advanced industrial countries (see section 3.0). Under these two sets of conditions one would predict a slowing down in the rate at which production is delocalized to the Third World by TNCs in the advanced industrial countries and indeed textile firms do appear disinclined to delocalize production further (see section 4.1). As a recent UNIDO study thus concluded, "[d]ifferences in wage levels are, at best, ambiguous deter- minants to use when deciding on the location of an industry ...or predicting changes in the world industrial map" (UNIDO:1983,227). First, because wage rate differentials across countries change, sometimes dramatically, over relatively short periods of time. They are thus only a short-term advantage. Second, because lowered wage rates, especially in times of rapid technological change, may provide little stimulus to the growth of domestic textile production. Only with these points in mind can the comparative labour cost data contained in Table 18 be inter- preted since following neoclassical logic we would expect the

UK textile industry to be growing relative to the Italy, the Canadian relative to the American and the French relative to the German. Colombia should have a considerable advantage in American markets relative to Mexico, Argentina and the industrial heartland of Brazil and Indian textiles should be replacing textile exports from Hong Kong, South Korea and Taiwan at a rapid pace. None of the above is, in fact, occuring. Indeed, present trends for each of these sets of countries is quite the reverse.

Table 18

Not only are relative wage rates unreliable indicators of future trends in the location of textile plants but the introduction of technological change further diminishes the importance of wages in the choice of production sites. Whereas initially internationalization in the textile industry proceeded along neoclassical lines with firms relocating labour intensive segments of their production processes to countries or economic free zones where wage costs were lower, the effect of international differences in wage levels has tended to decline to the extent that producers chose their techniques with a view to reducing the amount of labour required or they develop products whose characteristics can only be realized through a specific set of capital or knowledge-intensive techniques .Perhaps one of the most striking cases in which a general reduction in the labour input has nearly eliminated the advantage of low wage costs is in semi-conductor assembly.

> With the manual technology of the 1970s, Hong Kong production costs were 33 percent of those in America; with the semi-automatic technology of the early 1980s, the advantage had fallen to 63 percent; but with the automated assembly lines installed in 1983, production costs in Hong Kong were only marginally lower 8 per cent) than those in the US. (Kaplinsky:1984,11).

One can test for possible factor substitution in the textile industry by examining how the labour productivity (P=value added per employee) of a this industry varies across countries with the level of wages (WS). In a recent UNIDO study, Industry in a Changing World (1983,238-239), such a test was carried out by fitting the following function to data for the 1970s:

$$\log P = \log a + b \log WS +$$

Table 18

Comparative Cost of Labour in the Textile Industry:Summer 1981

Country	Avg.cost per operator hour(3-shift basis) + charges in US dollars	Ratio to US Costs %
USA	7.03	100
Canada	6.64	94
Belgium	9.34	133
Netherlands	9.16	130
German,FR	8.17	116
Italy	7.23	103
France (N)	6.40	91
France (E)	5.77	82
UK	5.57	79
Japan	4.90	70
Spain	4.48	64
Greece (N)	3.00	42
Portugal	1.88	27
Turkey	1.07	15
Tunisia	1.55	22
Morocco	0.75	11
Egypt	0.43	06
MEXICO	3.06	44
Brazil (S.P.)	2.39	34
Argentina	2.03	29
Colombia	1.76	25
Brazil (N.)	1.29	18
Hong Kong	1.42	20
South Korea	1.35	19
Taiwan	1.32	19
Singapore	1.12	16
India	0.69	10
Indonesia	0.63	9
Philippines	0.43	6
Thailand	0.34	5

Source: Werner Associates Inc., Newsletter (Brussels),June 1981 cited in Toyne:1984,pp.26-7.

The analysis revealed a significant correlation between productivity and wage levels. When value added ,in the equation,is measured in producer prices, the resultant coefficients might also be interpreted as elasticities of substitution between labour and capital. Interestingly enough the degree of substitution is higher in textiles (0.81) than in Iron and Steel 90.71) or non-metallic minerals (0.80) (UNIDO:1983,239). Modifying the factor intensity of pro-production rather than relocating production thus becomes an alternative strategy for firms in the advanced industrial countries and the results of adopting a modernization strategy are evident in the considerable share of textile and clothing products still originating in the advanced indus-trial countries and being sold within AIC markets (see section 2.3). It is also evident in the fact that in 1982 , 11 of the 15 leading textile exporters and 6 of the top ten clothing exporters were advanced industrial capitalist countries (p.21 above).

For the export-oriented textile firms of Third World countries a number of consequences may flow from the accelerated rate of technological change in the textile industries of the advanced industrial countries. First, as pointed out in section 5.2, competitiveness is far more a function of productivity increases than of low wages. Second, increased productivity coupled with greater versatility and flexibility of production and close interaction between producers and consumers is likely to increase the competitive advantage of the advanced industrial countries relative to most Third World countries over the medium term. In the short run, while textile and clothing modernization strategies are being pursued,protection is likely to remain high further limiting the entry of new Third World producers into the club of exporting nations. Under these conditions , it appears that the adoption of capital intensive techniques similar to those being put into place in the AICs is fast becoming an imperative in the competitive struggle of Third World firms for export markets in the AICs. To some extent this is already being reflected in the figures on rising production and declining employment in Third World textile and clothing industries (Table 2).

New CAD/CAM technologies being introduced into textile and clothing design and manufacture, however, require a particularly close relationship among users and between users and vendors in order to generate the appropriate software and keep it current (Kaplinsky:1984,10). There is thus greater likelihood

> that the diffusion of electronics tech-nologies to LDCs is likely to occur selectively in the physical-manufacturing sphere of production (rather than in design and information corrdination) and this is likely to limit the extent to which LDCs enterprises can realise systems gains. Thus there are reasons to suppose...

> that the technology is diffusing more rapidly to the middle and upper steps of the technological ladder (in which it is crucial that the NICs succeed in order to vacate the lower steps for other LDCs), and more rapidly to de veloped than developing economies. If this is indeed the case then it is likely that the comparative advantage of Third World producers who do not use the new technology, will be under-mind. (Kaplinsky:1984,10).

Not all Third World countries,however, must go this route as the choice of technique itself depends upon the choice of market and the choice of products for that market. Selling in the markets of the advanced industrial countries is not the only possibility. Some " low wage countries may be able to continue making economical use of older machinery in the production of simple items for rural consumption and some low quality speciality products. The availability of domestic raw materials in some countries will enhance their competitiveness in certain product lines."(de Vries & Brakel: 1983, 10).

Even where increasing the efficient use of existing factors of production proves inadequate, Third World firms may not need to consider adopting the most sophisticated techniques. In spinning, open-end spinning may only marginally reduce employment in the spinning industry but it might improve productivity substantially. In weaving, on the other hand, the use of shuttleless looms may both unnecessarily reduce employment and increase costs to the extent that capacity is underutilized or the financial burden incurred in the purchase of such looms is excessive.

Finally, it should be remembered that data in sections 2.3 and 2.5 revealed that trade in textiles and clothing was growing amongst ALADI and East Asian countries. Demand projections examined in section 2.4 also pointed to the future importance of national and regional markets in the Third World. Given current trade restrictions and the likelihood that negotiations over the short term will not result in a significant liberalization of north-south trade in textiles and clothing (see section 4.1) , national and regional markets should not be overlooked in the design of a restructuring strategy.

ENSEMBLE DES RESTRICTIONS COMMERCIALES ET AUTRES MESURES TOUCHANT LES IMPORTATIONS DE TEXTILES ET D'HABILLEMENT
(octobre 1988)

	Adhésion à l'AMF	CEE (2)	ETATS-UNIS (2)	CANADA	AUTRICHE	SUISSE	FINLANDE	NORVEGE (3)	SUEDE (2)
ARGENTINE	[1]	31.12.88 [3]e							
BANGLADESH		Accord de consult.							
BOLIVIE	[1]								
BRESIL		31.12.88 [16]e	31.03.88 [17]e	31.12.88 [1]	31.10.91 [2]				
BULGARIE				31.12.91					
CHINE		31.12.93		31.12.91					
COLOMBIE		31.12.88 [3]e	30.06.88 [4]e						
CHYPRE		[4]							
REPUBLIQUE DOMINICAINE			31.05.88 [4]						
EGYPTE	[1]	31.12.91 [1]	Accord de consult.		Accord de consult.				
EL SALVADOR									
GHANA									
GRECE		[4]	Accord de consult.						
GUATEMALA		Accord de consult.							
HAITI		Accord de consult.	30.04.92 [5]						
HONG KONG		31.12.92 [44]e	31.12.92 [22]e	31.12.91 [26]	31.01.91 [3]		31.07.89 [4]		31.03.91 [17]e
HONGRIE		31.12.91 [22]e	Accord de consult.						
INDE		31.12.91 [18]e	31.12.92 [41]e	31.12.91 [7]	31.12.91 [3]		31.12.91 [3]	31.12.91 [25]	30.06.78 [19]e
INDONESIE		Accord de consult.							
ISRAEL									
JAMAIQUE			Accord de consult.						
JAPON			31.12.91 [16]	31.12.88 [3]				Autorisation automatique [4]	
COREE		31.12.92 [44]e	31.12.92 [21]e	31.12.91 [25]	31.07.92 [7]		31.12.92 [7]	31.12.90 [4]	30.06.91 [19]e

./...

		CEE (2)	ETATS-UNIS (2)	CANADA	AUTRICHE	SUISSE	FINLANDE	NORVEGE (3)	SUEDE (2)
	Adhésion à l'AMF								
MACAU		31.12.82 [28].	31.12.82 [18].	31.12.81 [10]	31.12.81 [1]		31.12.81 [2]		31.12.88 [11].
MALAISIE		31.12.82 [11].	31.12.88 [8].	31.12.81 [3]			31.12.81 [1]	31.12.81 [25]	30.06.88 [6].
MALTE		Contingents accordés [5]	Accord de consult.						30.06.81 [5]
MAURICE		[4]							31.12.81 [4]
MEXIQUE		31.12.82 [2].	31.12.81 [9]						
MAROC		[4]							
NICARAGUA			Accord de consult.						
PAKISTAN		31.12.83 [16].	30.06.82 [7].	31.12.81 [1]	Accord de consult.				30.02.82 [5].
PEROU		31.12.82 [3].	Accord de consult.						
PHILIPPINES		31.12.82 [11].	31.12.82 [104].	31.12.81 [11]				31.12.82 [25]	31.10.80 [7].
POLOGNE		31.12.81 [22].	31.12.88 [20].	31.12.81 [14]					
PORTUGAL		[4]	Accord de consult.						
ROUMANIE		31.12.82 [36].	31.12.82 [4].	31.12.81 [11]					
SINGAPOUR		31.12.82 [17].	31.12.87 [9]	30.06.82 [6]			31.12.81 [1]	31.12.82 [25]	31.11.81 [8].
ESPAGNE		[4]	Accord de consult.						
SRI-LANKA		31.12.82 [5].	30.04.83 [4]	31.12.81 [2]				31.12.82 [25]	31.07.80 [4].
TAIWAN			31.12.82 [*]	31.12.81 [30]					
THAILANDE		31.12.82 [12].	31.12.82 [13].	31.12.81 [5]			31.12.80 [2]	31.12.82 [25]	30.06.81 [7].
TRINIDAD ET T.									
TUNISIE		[4]							
TURQUIE		[4]							
URUGUAY		31.12.82 [1].							
YOUGOSLAVIE		31.12.82 [19].	31.12.80 [1].						31.12.80 [9].

./...

Signataire de l'AMF en 1972

Signataire de l'AMF renouvelé en 1977

Restrictions des exportations sous les conditions de l'accord AMF (Accord bilatéral sous couvert de l'Article 4 dans la plupart des cas)

Accord sous l'égide de l'AMF mais comprenant des mesures autres que des restrictions des importations

Accord bilatéral de restrictions des exportations en dehors de l'AMF

Restrictions unilatérales des importations

[10] Nombre de catégories de produits effectivement couvertes par les restrictions (voir les notes au Tableau)

[?] Valeur et contenu de l'Accord non connus

(1) Accepté mais sujet à l'achèvement de procédures internes

(2) Dans le cas de la CEE, des USA et de la Suède, le signe [*] indique que l'accord couvre l'ensemble des produits

(3) Les importations de textiles en Norvège sont réglementées par un système de contingentement global qui s'applique à tous les fournisseurs sauf aux pays de la CEE et de l'AELE et aux six pays qui ont signé des accords bilatéraux (Inde, Malaisie, Philippines, Singapour, Sri Lanka, Thaïlande). Les importations de quatre groupes de produits non couvertes par le système de contingentement global sont couvertes par des accords annuels avec la Corée et le Japon

(4) La CEE applique un système de surveillance communautaire aux importations de certains produits textiles originaires des pays méditerranéens avec lesquels elle a signé des accords préférentiels. Un système de coopération administrative a également été introduit avec la plupart de ces pays. L'accord d'Association entre la CEE et la Turquie prévoit la possibilité de mesures de sauvegardes qui ne sont pas invoquées actuellement.

NOTES :

L'OCDE a utilisé la documentation du GATT (documents préparés pour le Comité des Textiles) et d'autres informations disponibles pour établir ce tableau. En règle générale, il est difficile d'obtenir des informations à jour sur les restrictions applicables aux pays non-participants à l'AMF. De plus, à cause des fréquents changements apportés aux restrictions, aussi bien à l'intérieur qu'en dehors du cadre de l'AMF, les informations données dans le tableau sur le nombre de catégories de produits tombant sous les restrictions à l'importation doivent être considérées comme des approximations. Il faut également rappeler que les pays importateurs n'utilisent pas une classification identique pour les articles textiles et les vêtements. C'est pourquoi il serait trompeur de comparer le nombre de catégories restreintes dans chaque pays

L'Australie et la Nouvelle-Zélande ne sont pas compris dans ce tableau car ces pays appliquent un système de contingentement aux importations non-discriminatoire.

BIBLIOGRAPHY

Aggarwal,V.(1983) "The unraveling of the Multi-Fiber Arrangement,1981:an examination of international regime change" International Organization,V 37,No. 4 (Autumn) pp.617-646.

Amsalem,M. (1983) Technology Choice in Developing Countries The Textile and Pulp and Paper Industries (Cambridge,Mass.:The MIT Press).

Ayala,J. et al.(1982) "La crisis economica:evolucion y perspectivas," in Pablo Gonzalez Casanova & Enrique Florescano (eds.), México Hoy (Mexico: Siglo XXI).

Balassa,B. & C.Balassa (1984) "Industrial Protection in the Developed Countries" The World Economy (June),pp.179-196.

Barkin,D. & G.Esteva(1982) "Social Conflict and Inflation in Mexico" Latin American Perspectives, Vol.IX,No.1 (Winter),pp.48-63.

Bénabou,R. (1982) "La Corée du Sud ou l'industrialisation planifiée" in CEPII, économie prospective internationale,No. 10 (2e trimestre)pp. 13-156.

Besnainou, D. (1982) "L'industrie mexicaine: les limites de l'atout pétrolier" in CEPII, économie prospective internationale,No. 10 (2e trimestre) pp. 157-254.

Boon,G. (1981) Technology Transfer in Fibres,Textile and Apparel Rockville,Md.:Sijthoff & Noordhoff).

Boudard,A-M (1984) "Les échanges de produits textiles de 1967 à 1982" Revue du CEPII, No. 18 (2ème trimestre), pp. 111-118.

CEPII (Centre d'Etudes Prospectives et d'Informations Internationales) (1978) Les économies industrialisées face à la concurrence du Tiers- Monde Le cas de la filière textile (Paris:Cepii,Août)

Clairmonte,F. & J. Cavanagh (1981) The World in Their Web Dynamics of Textile Multinationales (London:Zed Press)

de la Torre,R. (1980) "Primeros resultados del censo," Razones No.14 (July),pp.33-38.

de Vries, B. & W.Braker (1983) Restructuring of Manufacturing Industry The Experience of the Textile Industry in Pakistan, Philippines, Portugal and Turkey (Washington,D.C.: World Bank Staff Working Papers,No. 558).

Dolan,M. (1983) "European restructuring and import policies for a textile industry in crisis,"International Organization,Vol.37, No.4 (Autumn) pp.583-616.

Fajnzylber,F.(1983) La Industrializacion Trunca de America Latina (Mexico:Editorial Nueva Imagen)

Frobel,V.,J.Heinrichs and O. Kreye (1980) The New International Division of Labour: Structural Unemployment in Industrialised Countries and Industrialisation in Developing Countries (Cambridge:Cambridge University Press).

GATT (1984) Textiles and Clothing in the World Economy, Background study prepared by the GATT Secretariat to assist work undertaken by the Contracting Parties in pursuance of the Decision on Textiles and Clothing Taken at the November 1982 Ministerial Meeting (Geneva:July).

Giget,M. (1984) "Les Bonzai de l Industrie Japonaise:Elements de Reflexion sur l'Integration de la Technologie Dans la Fonction Strategique des Entreprises Japonaises"(Paris:SEST,Mai).

Godet,M. & Ph. de la Saussay (1984) Rapports Nord-Sud:Mythes et Réalités (Paris:Ministère de l'Industrie et de la Recherche, Centre de Prospective et d'Evaluation, Janvier).

Ilgen,T.(1983) "'Better living through chemistry ":the chemical industry in the world economy" International Organization, Vol.37,No. 4 (Autumn)pp.647-680.

Inter-American Development Bank (IDB) (1982) Economic and Social Progress in Latin America:The External Sector (Washington:IDB)

ILO (1984) Technology choice and employment generation by multinational enterprises in developing countries (Geneva:International Labour office).

Kaplinsky,R. (1984) "The International Context for Industrialisation in the Coming Decade" Journal of Development Studies, forthcoming.

Lall, S. (1984) Acquisition of Technological Capability Project World Bank Project India Sector Overview: Textiles (Oxford, April)

Langdon,S.(1981)Industrial Restructuring in the Dutch Textile Industry," paper prepared for the European Politics Group Conference, Canadian Political Science Association (Ottawa: December).

Montavon,R. with M.Wionczek & F.Piquerez (1979) L'implantation de deux entreprises multinationales au Mexique (Paris:PUF)

Morawetz,D.(1980) Why the Emperor's New Clothes are not made in Colombia (Washington:World Bank, World Bank Staff Working Paper No. 368, January).

Mahon,R. & L.Mytelka (1983) "Industry, the state and the new protectionism: textiles in Canada and France" International Organization, Vol.37,No.4 (Autumn) pp.551-582.

Mytelka, L.(1981) "Direct Foreign Investment and Technological Choice in the Ivorian Textile and Wood Industries," Vierteljahresberichte Nr. 83, pp. 61-79.

Mytelka,L. (1982) "In Search of a Partner: The State and the Textile Industry in France," in S.Cohen and P. Gourevitch,eds., France in a Troubled World Economy (London:Buetterworth) pp. 132-50.

Newfarmer,R. & W.Mueller (1975) Multinational Corporations in Brazil and Mexico:Structural Sources of Economic and Noneconomic Power Report to the subcommittee on multinational corporations of the committee on foreign relations,United States Senate (Washington: GPO,August)

OCDE (1983) Les Industries du Textile et de l'Habillement, Problèmes structurels et politiques des pouvoirs publics dans les pays de l'OCDE (Paris:OCDE).

Ozawa,T.(1980)"Government control over technology acquisition and firms' entry into new sectors: the experience of Japan's synthetic-fibre industry" Cambridge Journal of Economics, 4 ,pp.147-157.

Shaw,R.W. and S.A. Shaw (1983) "Excess Capacity and Rationalisation in the West European Synthetic Fibres Industry", The Journal of Industrial Economics, Vol. XXXII,No.2 (December)pp.149-166.

Shepherd,G.(1983) "Textiles: New Ways of Surviving in an Old Industry" in Shepherd,G., F Duchène, C. Saunders,ed., Public and Private Strategies for Change (London: Frances Pinter),pp.26-51.

Toyne,B.,J.Arpan,D.Ricks, T.Shimp and A.Barnett (1984) The Global Textile Industry (London:George Allen & Unwin).

UN,Centre on Transnational Corpcrations (1984),Transnational Corporations in the Synthetic Fibre, Textile and Clothing Industries (New York: United Nations)

UNCTAD (1984) Programme of Cooperation among Developing Countries, Exporters of Textiles and Clothing, Outward Processing Trade, Karachi Workshop, 21-26 July, Agenda item 2 (iii).

UNCTAD (1984),Programme of Cooperation among Developing Countries, Exporters of Textiles and Clothing,The Multi-fibre Arrangement in Theory and Practice, Back-up Study on International Trade in Textiles and Clothing,Revised Draft,Karachi Workshop, 21-26 July, Agenda Item 2(ii) KAR/4.

UNCTAD (1984),Programme of Cooperation among Developing Countries, Exporters of Textiles and Clothing, The Multilateral Textile Regime and the International Trading System Annex:Recent Trends in Developed and Developing Countries,Karachi Workshop,21-26 July, Agenda item 1 (i),KAR/1.

UNIDO (1982) Handbook of Industrial Statistics (New York: United Nations)

UNIDO (1983) Industry in a Changing World (New York: United Nations)

Woolcock,S. (1982) "Textiles and Clothing" in L. Turner and N. McMullen, The Newly Industrializing Countries:Trade and Adjustment (London: Allen & Unwin).

Yoshioka,M. (1979) 'Overseas Investment by the Japanese Textile Industry" The Developing Economies, 17:1 .