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Industrial Prospects and Policies in the Developed Countries

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INDUSTRIAL PROSPECTS AND POLICIES IN THE DEVELOPED COUNTRIES

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This paper subjects two, conflicting, claims to scrutiny. For one thing, it has been alleged that increases in the import of manufactured goods from the developing countries have adversely affected the industrial sector in the developed countries and that the continuation of these trends bodes ill for the future of the sector. For another thing, it has been suggested that growing protectionism in the developed countries has compromised the prospects for an outward-oriented industrial strategy in the developing countries and makes it necessary for these countries to turn to domestic markets or to trade among themselves.

It is shown in the paper that trade in manufactured goods with the developing countries benefited the developed countries by increasing demand for their products at a time of low capacity utilization as well as through specialization according to comparative advantage. The developed countries will derive further gains from the future expansion of this trade, estimated by the author for the 1978-90 period on the assumption of the continuation of present trade policies. At the same time, under the assumptions made, the rapid growth of manufactured exports of the developing countries would continue.

It has also been alleged that obtaining long-term gains through international specialization in manufactures entails a considerable cost of adjustment in the developed countries. The paper provides evidence that these fears have been much exaggerated. For one thing, manufactured trade between developed and developing countries increasingly involves intra-industry specialization that has a low adjustment cost. For another thing, the transferability of skills in various occupational categories limit the cost of adjustment in inter-industry specialization and this cost can be further reduced through retraining and early retirement provisions.

On the basis of these considerations, the author suggests lowering rates of industrial protection in the developed countries. This would involve, among other things, transforming the Multifiber Arrangement from an instrument of protection to one of adjustment. The author further suggests instituting an international safeguard code to smooth the process of adjustment to freer trade in the developed countries.

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Introduction

The growth of the developed countries' imports of manufactured goods from the developing countries has received much attention in recent years. It has been alleged that increases in imports have adversely affected the industrial sector of the developed countries and that the continuation of this trend bodes ill for the future of the sector.[1/] In turn, it has been claimed that growing protectionism in the developed countries has compromised the prospects for an outward-oriented industrial strategy in the developing countries and makes it necessary for these countries to turn to domestic markets or to trade among themselves.

The present paper will subject these, conflicting, claims to scrutiny. It will examine recent changes in the pattern of international specialization in manufactured goods and consider their impact on the industrial sector of the developed countries. The protectionist measures applied by these countries and their effects on international trade flows will also be analyzed.

The paper will further review the prospects for manufacturing trade and for industrial growth in the developed countries. This will be followed by a discussion of the possibilities for intra-industry trade between developed and developing countries, and of the implications this trade has for the process of adjustment in the developed countries. Finally, desirable

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1/ A recent example is provided by Paul Samuelson, in whose view "manufacturing industry is trying to leave North America and Western Europe. The basic comparative advantage is moving to the 'Gang of Four': South Korea, Taiwan, Hong Kong, and Singapore" (*World Business Weekly*, December 1, 1980).

policy changes in the developed countries will be briefly considered.

I. Changing Patterns of Trade in Manufactured Goods between Developed and Developing Countries

Manufacturing Trade and Growth in the Developed Countries, 1963-1978

The 1963-73 period was characterized by rapid industrial expansion in the developed countries. Manufacturing output rose at an average annual rate of 5.4 percent, exceeding the GDP growth rate of 4.6 percent. The volume of manufactured imports from the developing countries grew even faster, averaging 16 percent a year in volume terms. Starting from a low base, these imports reached $15.1 billion in 1973, accounting for 19 percent of the total exports of the developing countries including, and 32 percent excluding, fuels.[1/] Nevertheless, they barely exceeded one percent of the value of manufacturing production in the developed countries.

With slow recovery following the world recession of 1974-75, the rate of growth of GDP in the industrial countries averaged 2.5 percent, and that of manufacturing output 2.2 percent, between 1973 and 1978. At the same time, imports of manufactured goods from the developing countries continued to increase rapidly, with their rate of growth averaging 10.2 percent a year.

These figures should not be interpreted, however, as evidence that trade in manufactured goods with the developing countries had adverse effects on developed country industries. This is because their increased export earnings permitted the developing countries to increase their purchases of manufactured goods from the developed countries. In fact, financed in part by

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1/ Unless otherwise noted, data on the gross domestic product and manufacturing output originate in United Nations, *Yearbook of National Accounts Statistics*, 1978 while the trade figures derived from GATT, *International Trade 1978/79*, and *1979/80*. Both developed and developing countries have been defined to exclude Southern Europe.

foreign borrowing, the exports of manufactured goods from the developed countries to the developing countries grew more than their imports. The dollar value of these exports more than tripled, from $52 billion in 1973 to $159 billion in 1978, while imports increased from $16 billion to $44 billion. As a result, the export surplus of the developed countries in trade in manufactured goods with the developing countries rose from $36 billion to $115 billion, accounting for 3.7 percent of manufacturing output in the developed countries in 1978. In the same year, the share of manufactured exports to, and imports from, the developing countries in domestic output was 5.1 percent and 1.4 percent, respectively.[1/]

One can thus reject the contention that trade in manufactured goods with the developing countries would have adversely affected industrial growth in the developed countries. Rather, given the existence of unused capacity in these countries during the period under consideration, their rising export surplus in trade in manufactured goods raised the level of their industrial output, both directly and indirectly through its multiplier effects. And, developed countries further enjoyed the benefits of increased specialization according to comparative advantage that provided gains to both groups of countries.

The explanation of the slow growth of industrial output in the developed countries lies elsewhere. To begin with, the adverse effects of the quadrupling of oil prices aggravated the recession that was to follow the

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1/ Bela Balassa, "Trade in Manufactured Goods: Patterns of Change," *World Development*, March 1981.

1972-73 boom. The parallel application of deflationary policies by countries further deepened the recession and slowed the subsequent recovery.[1/] Finally, the growth of the public sector, the increased scope of government regulations, as well as fiscal and social measures that tend to discourage work effort, risk-taking, savings and investment, adversely affected the growth of their manufacturing output.

Protectionist Actions by the Developed Countries

The question needs further to be answered if increased protectionism in the developed countries has adversely affected the imports of manufactured goods from the developing countries. In fact, in the wake of the oil crisis and the world recession, protectionist actions multiplied and assumed new forms, including non-tariff measures, such as import quotas, orderly marketing arrangements, 'voluntary' export restraints, and countervailing actions, as well as government aids and efforts made to establish international cartels. Government aids might have been provided purportedly for adjustment assistance but, more often than not, they in effect supported the industry against import competition.[2/]

Protectionist actions against developing countries culminated in 1977 when European countries again experienced a recession and the U.S. balance of payments deteriorated as a result. The process has not continued and, in some respects, it has been reversed in subsequent years, however. This will be apparent if we consider changes in tariff and nontariff measures, govern-

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1/ Cf. Bela Balassa, "Resolving Policy Conflicts for Rapid Growth in the World Economy," *Banca Nazional del Lavoro, Quarterly Review*, September 1978.

2/ Bela Balassa, "The 'New Protectionism' and the International Economy," *Journal of World Trade Law*, September-October, 1978. For a discussion of subsequent events, discussed in the next paragraphs, see the author's "The Tokyo Round and the Developing Countries," *ibid.*, March-April, 1980.

ment aids, and cartel-type arrangements.

To begin with, the Tokyo Round of Multilateral Trade Negotiations has been brought to completion. It has involved an average one-third tariff reduction on industrial products of interest to the developing countries as well as agreement on several codes of non-tariff measures, with the significant exception of the code of safeguards. Of particular importance is the introduction of an injury test in U.S. legislation on countervailing action; previously countervailing duties were imposed in the event of export subsidization abroad, irrespective of whether there had been injury to domestic industry.

The developing countries have further benefited from more liberal treatment in the application of escape clauses in the United States and the increased use of tariffs in the place of import restrictions in the few cases when escape clause actions have been taken against them. Also, since 1977, there have been fewer instances of safeguard measures being used against developing countries in Western Europe. Last but not least, Japan has liberalized imports, favorably affecting in particular the imports of manufactured goods from the developing countries.

Following the proliferation of government aids to industry in the years following the oil crisis, some changes in the opposite direction have occurred in this respect also. After the Spring 1978 parliamentary elections, the government of Raymond Barre has announced its intention to reduce the scope of government aids to industry in France and the government of Margaret Thatcher has subsequently introduced a similar program in Britain. It also appears that government intervention is on the decline in Japan, and the Reagan Adminstration is not likely to pursue the interventionist strategy proposed under the heading

"re-industrialization" by Jimmy Carter.

At the same time, France has ceased to promote its earlier proposal for world-wide organized trade and the defeat of Commissioner Etienne Davignon's scheme for the establishment of a synthetic fiber cartel in the European Common Market has discouraged attempts to set up cartels in other industries. Finally, efforts made to establish shipbuilding and steel cartels in the framework of the OECD have met with little success.

The easing of protectionist pressures after 1977 has contributed to the acceleration of the growth of the developed countries' imports of manufactured goods from the developing countries. While the volume of these imports grew by only 7.6 percent in 1977, the increase was 15.5 percent in 1978. A further increase of 26 percent in terms of dollar value occurred in 1979 that may be translated into a volume increase of about 16 percent.

Furthermore, although the more restrictive rules on textiles and clothing imports from the developing countries adopted in the course of the 1977 revision of the Multifiber Arrangement have remained in effect, after stagnation in 1977 the imports of textiles and clothing from the developing countries have risen again. The increase was 25 percent in 1978 and 23 percent in 1979 in terms of dollar value, corresponding to a rise of 8-9 percent and 7-8 percent, respectively, in volume terms.

These conclusions should not give rise to undue optimism, since protectionist forces in the developed countries remain strong. Nevertheless, it is noteworthy that the 1980 recession has not brought an aggravation of protectionist tendencies against the developing countries as it had been

feared. Rather, the fire of the protectionists has been directed against other developed countries that can better defend their interests than the developing countries.

Once economic expansion in the developed countries is again under way, the time may be propitious for a further assault on protectionism. Suggestions to this effect will be made in the concluding section of the paper. In the following, prospective trends in trade in manufactured goods will be examined on the assumption that the trade policies presently applied in the developed countries will continue during the period under consideration.

Projections for 1978-1990 1/

The author has projected the developed countries' imports of manufactured goods from the developing countries for the 1978-90 period for the case that present trade policies, including the Multifiber Arrangement, continue. It has further been assumed that the gross national product of the developed countries would rise at an average annual rate of 3.9 percent between 1978 and 1990 and that their income elasticity of import demand for manufactured goods originating in the developing countries would be 3.2 during this period. This elasticity is lower than the estimated income elasticity of 4.1 in the 1973-78 period, reflecting the view that developing countries would obtain smaller relative gains from the higher absolute level of exports reached in 1978.

In turn, it has been assumed that income elasticities of import demand for manufactured goods originating in the developed countries would be 2.0 in

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1/ This section relies on Bela Balassa, "Prospects for Trade in Manufactured Goods between Industrial and Developing Countries," *Journal of Policy Modeling*, October 1980.

OPEC and 1.5 in non-OPEC developing countries, representing a decline from the observed income elasticities of 3.0 and 1.8, respectively, in the 1973-78 period. With projected GNP growth rates of 6.0 percent and 5.5 percent, averaging 5.6 percent, the exports of manufactured goods from the developed countries to the developing countries would rise at an average annual rate of 9.7 percent between 1978 and 1990 as compared to projected increases of 12.5 percent in their imports.

Notwithstanding the higher rate of import growth, the projections would entail an increase in the export surplus of the developed countries in their trade in manufactured goods with the developing countries from $115 billion in 1978 to $374 billion in 1990, expressed in terms of 1978 prices. This increase would contribute to industrial growth in the developed countries, raising the rate of growth of production (3.9 percent), above that of consumption (3.6 percent), of manufactured goods.

At the same time, the developing countries would become increasingly important markets for the manufactured products of the developed countries, accounting for 18 percent of the increment in production, and for 59 percent of the increment in exports to non-partner countries, between 1978 and 1990. In the same period, the developing countries would provide 9 percent of the increment in the developed countries' consumption of manufactured goods and 45 percent of the increment of their imports from non-partner countries.[1/]

1/ Trade with non-partner countries excludes U.S.-Canada trade that takes place largely in the framework of multinational corporations and one-third of which is not subject to duty under the North American Automotive Agreement, as well as trade among the member countries of the European free trade area in manufactured goods.

The developed countries would benefit from the growth of international trade in manufactured goods with the developing countries through specialization according to comparative advantage, entailing the expansion of industries embodying sophisticated technology, high-level manpower, and physical capital. Still, this pattern of specialization would not involve a decline in output in any of the eight industrial categories for which separate projections have been made.

In particular, rates of growth of the imports of textiles and clothing of 6 percent and 7 percent, projected under the assumption of the continued operation of the Multifiber Arrangement, would permit production in these industries of the developed countries to continue to rise. For the 1978-90 period, production in the developed countries is projected to increase at average annual rates of growth of 2.2 percent for textiles and 2.5 percent for clothing.

II. Intra-industry Trade in Manufactured Goods between Developed and Developing Countries

Inter-industry vs. Intra-industry Specialization

Following the traditional discourse on the effects of trade between developed and developing countries, the above discussion has been couched in terms of inter-industry specialization that concerns the allocation of resources among industries. In this section, the possibilities for intra-industry specialization in trade in manufactured goods between developed and developing countries will be considered.

Following a paper by the author on the effects of trade liberalization in the European Common Market,[1/] considerable attention was given to intra-

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1/ Bela Balassa, "Tariff Reductions and Trade in Manufactures Among Industrial Countries," *American Economic Review*, June, 1966.

industry trade among the developed countries. This trade may involve horizontal specialization through the exchange of differentiated products, as well as vertical specialization through trade in parts, components, and accessories of a particular product.

Intra-industry trade was said to occur among countries at similar levels of development that have similar relative factor prices. Empirical research also dealt with intra-industry trade among such countries, first in developed areas and, subsequently, in developing regions. This orientation of theoretical and empirical research was confirmed by contributions to the recent Symposium on intra-industry trade.[1/]

At the Symposium, the author further addressed himself to intra-industry trade between developed and developing countries. He suggested that "horizontal specialization will also occur among countries at different levels of development, when the product varieties traded will incorporate attributes that correspond to the factor endowments of the countries concerned."[2/] Drawing on earlier work on subcontracting, he also noted the existence of vertical specialization between developed and developing countries in the framework of the international division of the production process.[3/] In the following, empirical evidence will be provided on the extent of horizontal and vertical specialization between the two groups of countries, further indicating its implications for the process of adjustment in the developed countries.

1/ Herbert Giersch ed., *On the Economics of Intra-Industry Trade: Symposium 1978*, Institut für Weltwirtschaft an der Universität Kiel, Tübingen, J.C.B. Mohr (Paul Siebeck) 1979.

2/ Bela Balassa, "Intra-Industry Trade and the Integration of Developing Countries in the World Economy," *Ibid.*

3/ In this connection, reference may be made to the ongoing research project directed by Joseph Grunwald of the Brookings Institution, "North-South Complementary Intra-Industry Trade" which examines various forms of vertical specialization and the economic effects of international subcontracting in selected Latin American countries.

Horizontal Specialization

The U.S. textiles and clothing industry provides a case study of horizontal (product) specialization.[1/] As an introduction to the discussion, reference may be made to the employment effects of productivity growth and of changes in trade flows since 1977, the year when the industry mounted a protectionist campaign.

The data of Table 1 indicate that, in their impact on employment, the growth of labor productivity much dominated changes in trade flows. Whereas productivity growth was responsible for the loss of 71 thousand jobs in textiles and 105 thousand jobs in clothing between 1977 and 1979, changes in trade flows led to a gain of 14 thousand jobs in textiles and to a loss of 17 thousand jobs in clothing.

The results do not confirm the fears expressed as to the adverse effects of imports on employment in the U.S. textiles and clothing industry. At the same time, the aggregate data do not permit gauging the welfare gains obtained through product specialization in the industry. Evidence on the existence of these gains is provided by differences in unit values in domestic production and in imports.

In 1979, average unit values calculated per pound of fiber equivalent were $7.47 in U.S. production and $4.70 in imports.[2/] This result is the outcome of a process in which the shift of domestic industry to more sophisticated products with higher value added is accompanied by the growth of imports of relatively simple products that have low value added.

1/ This section draws on the author's submission to the U.S. International Trade Commission in the case of Textiles and Textile Products of Cotton from Pakistan, Washington, D.C., July 1980.

2/ Table 1 and U.S. Department of Commerce, International Trade Administration, *U.S. Imports & Import/Production Ratios for Cotton Wool & Man-Made Fiber Textiles & Apparel*, Washington, D.C., June 1980, pp. 3-11.

TABLE 1

Textiles and Textile Products: U.S. Domestic Production, Apparent Consumption, Imports, Exports and Employment

	Textile Mill Products (22)			Apparel and Other Textile Products (23)			Textiles and Textile Products (22+23)		
	1977	1978	1979	1977	1978	1979	1977	1978	1979
Current Values, $ million									
1) Domestic Production	40823	43888	46900	40079	43215	46690	80902	87103	93590
2) Total Imports	1765	2212	2190	3650	4833	5075	5415	7045	7265
3) Total Exports	1857	2073	3027	524	551	819	2381	2624	3846
4) Net Imports	-92	139	-837	3126	4282	4256	3034	4421	3419
5) Apparent Consumption	40731	44027	46063	43205	47497	50946	83936	91524	97009
6) Total Imports/ Apparent Consumption	4.33	5.02	4.75	8.45	10.18	9.96	6.45	7.69	7.49
7) Net Imports/ Apparent Consumption	-0.23	0.32	-1.82	7.24	9.02	8.35	3.61	5.08	3.52
Employment, Production, Prices									
8) Employment (thousands)	867.1	864.5	855.9	1331.6	1334.3	1313.1	2198.7	2198.8	2169.0
9) Output per Man, $1,000	47.1	50.8	54.8	30.1	32.4	35.6	36.8	39.6	43.1
10) Price Index, 1977=100	100.0	103.0	107.4	100.0	104.0	109.3	100.0	103.5	108.3
Values in 1977 Prices, $ million									
11) Domestic Production	40823	42610	43668	40079	41553	42717	80902	84163	86385
12) Apparent Consumption	40731	42745	42889	43205	45670	46611	83936	88415	89500
13) Actual Net Imports [a/]	-92	135	-779	3126	4117	3894	3034	4252	3115
14) Expected Net Imports [b/]	-92	-98	-99	3126	3307	3375	3034	3209	3276
15) Excess of Net Imports [c/]	0	233	-680	0	810	519	0	1043	-161
Employment Effects/Thousands									
16) Hypothetical employment [d/]	867.1	904.7	927.2	1331.6	1380.5	1419.2	2198.7	2285.2	2346.4
17) Actual Employment	867.1	864.5	855.9	1331.6	1334.3	1313.1	2198.7	2198.8	2169.0
Employment Loss Due To									
18) Productivity Increase [e/]	0	40.2	71.3	0	46.2	106.1	0	86.4	177.4
19) Excess of Net Imports [f/]	0	4.9	-14.4	0	26.9	17.2	0	31.8	2.8

TABLE 1 (contd.)

Textiles and Textile Products: U.S. Domestic Production
Apparent Consumption, Imports, Exports and Employment

Source: U.S. Industrial Outlook, 1980, Chapter 34, Textiles, p. 357 and Chapter 35, Apparel, p. 368.

Notes:

(a) Domestic price increase was assumed to apply to imports and exports.

(b) Expected net imports were calculated on the assumption that their 1975 share in apparent consumption remained unchanged in subsequent years.

(c) Differences between actual and expected net imports.

(d) Hypothetical employment was calculated on the assumption that 1975 levels of output per man remained unchanged in subsequent years.

(e) Employment loss due to productivity increases equals the difference between hypothetical and actual employment.

(f) Employment loss due to excess of net imports is calculated by dividing the excess of net imports by the 1977 level of output per man. The employment effects of change in the net imports of man-made fiber have been calculated in the same way.

The process of upgrading may involve shifts between products made from different materials or between products made from the same material. To begin with, man-made fibers have increasingly gained at the expense of cotton in the United States. Expressed in terms of linear yards, the production of cotton broadwoven fabrics fell from 6.3 billion in 1970 to 4.4 billion in 1977 and to 3.9 billion in 1979; in the same period, the production of man-made fiber fabrics rose from 4.9 billion to 6.3 billion and, again, to 6.6 billion.[1/]

Furthermore, among cotton broadwoven fabrics, shifts have occurred from lower value-added sheeting, duck, and print cloth to higher value-added cotton fabrics and, in particular, to corded colored yarn fabrics. As a result of these shifts, the share of the former group of fabrics in the total declined from 70.5 percent in 1970 to 57.0 percent in 1977 and it stabilized at that level afterwards.

Finally, within the duck, sheeting, and print cloth category, there has been a shift towards finer fabrics in the U.S. industry. The existence of this shift is indicated by the higher unit values of U.S. production and, in particular, exports as compared to imports. In 1979, export and import unit values, respectively, were $0.73 and $0.39 for cotton sheeting; $0.90 and $0.68 for cotton duck; and $0.80 and $0.34 for cotton print cloth. Average unit values for the three categories, taken together, were $0.53 for domestic production, $0.80 for exports, and $0.38 for imports.[2/]

1/ U.S. Department of Commerce, Bureau of Census, *Broadwoven Fabrics (Gray)*, Current industrial Reports, Summary for 1979, Washington, D.C., December 1980, Table 2.

2/ United States International Trade Commission, *Textiles and Textile Products of Cotton from Pakistan*, Washington, D.C., July 1980, pp. A-22 to A-32. All figures are per square yard; unit values for U.S. production of the individual fabric types are not available.

In explaining these differences, use may be made of information provided in a recent report of the U.S. International Trade Commission on cotton textiles imported from Pakistan that account for one-third of U.S. imports of cotton sheeting, cotton duck, and cotton print cloth. According to the report, "the types of cotton fabric which are produced in the largest quantity by the Pakistani textile industry include heavy coarse fabrics, which consume large quantities of raw cotton and can be manufactured by less sophisticated machinery with relatively lower skilled labor."[1/] Thus, while "imports of sheeting from Pakistan are heavily concentrated in the coarse osnaburg and classes A and B sheeting ... the finer class C sheeting accounted for more than two-thirds of domestic production."[2/] Also, imports of single-warp ducks from Pakistan "were concentrated in the lighter weight single fillings of average yarn numbers 10 to 15 /whereas/ the domestic production of ply-warp ducks /a more sophisticated product/ had very little competition from Pakistani imports."[3/] Finally, imports of print cloth from Pakistan were concentrated in types of fabric having average yarn numbers 20 through 39 as compared to usual range of between 27 and 44.[4/]

Men's and boys' cotton T-shirts provide another example of differences in product composition in U.S. production, exports, and imports. In 1979, unit values per dozen were $14.35 in domestic production, $20.70 in exports, and $9.45 in imports.[5/] These differences reflect the fact that men's and boys'

1/ *Ibid.*, p. A-14.

2/ p. A-15.

3/ p. A-16.

4/ *Ibid.*

5/ *Ibid.*, pp. A-79 to A-82.

T-shirts have increasingly become fashion items, with U.S. producers offering brand names that have particular consumer appeal.

The described cases provide evidence of an upgrading process in the U.S. textiles and clothing industry, with imports taking the place of domestic production that has shifted to higher value-added items which are more profitable and use more skilled labor. Value added per unit is even higher for exports, indicating the comparative advantages of the United States in relatively sophisticated products.

Product specialization, then, provides advantages to the U.S. textile and clothing industry and to the national economy in general, which are not reflected by the industry averages. In this connection, it should be added that the process of upgrading in the U.S. textile industry continues, with the shift from woven to knitted fabrics and, most recently, to stretch fabrics.

Vertical Specialization

Given its prominence in discussions on the effects of imports from developing countries, the textiles and clothing industry has been chosen as a case study in this paper. But, welfare gains may be obtained through horizontal, or product specialization in other industries as well.[1/] Further gains can be derived from vertical specialization through the international division of the production process.

A well-known example of vertical specialization is importation into the United States under tariff items 807.00 and 806.30, when duties apply

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1/ This is the case, for example, in the shoe industry where an upgrading of domestic production occurred *pari passu* with increased imports from the developing countries.

only to value added abroad but not to the U.S. inputs used in foreign production. The total value of such imports rose from $1.0 billion in 1966 to $2.2 billion in 1970, $7.2 billion in 1977, $9.7 billion in 1978, and $11.9 billion in 1979. In recent years, on the average, 72-73 percent of the total represented value added abroad.[1/]

About 45 percent of all imports entering under tariff items 807.00 and 806.30 originate in developing countries, with imports from Mexico ($2.1 billion), Malaysia ($0.7 billion) and Singapore ($0.6 billion) being the most important. But, value added abroad amounts to only 51 percent of the value of such imports originating in the developing countries.[2/]

In the trade literature, much attention has been given to imports under tariff items 807.00 and 806.30 into the United States and to imports under similar provisions into European countries.[3/] These forms of offshore procurement, however, represent only part of the trade that occurs in the framework of the international division of the production process. Thus, while U.S. imports from developing countries under tariff items 807.00 and 806.30 are dominated by television apparatus and semiconductors, there are rising imports of parts, components and accessories of machinery and transport equipment from the developing countries.

Parts, components, and accessories figure prominently in U.S. imports originating in Hong Kong, Korea, and Taiwan, each of which ships

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1/ U.S. International Trade Commission, *Tariff Items 807.00 and 806.30 U.S. Items for Consumption,* Specified Years 1966-79, Washington, D.C., June 1980, Table 1.

2/ *Ibid.,* Tables 13 and 26.

3/ Cf. e.g. J. M. Finger, "Tariff Provisions for Offshore Assembly and the Exports of Developing Countries," *Economic Journal,* June 1975.

several times more manufactured goods to the United States than Mexico and Malaysia that surpass them in terms of U.S. imports under tariff items 807.00 and 806.30. There is further a reverse flow of parts, components and accessories from the developed countries for assembly in the developing countries. For example, Taiwanese firms buy technologically sophisticated as well as capital-intensive parts, components, and accessories from the United States and Japan for assembly in Taiwan. This is the converse of the pattern observed in the developed countries that purchase simple, labor intensive parts, components, and accessories from the developing countries.

Note finally that the end products of the international division of the production process may also be sold in third countries. A case in point is worldwide sourcing in the automobile industry by General Motors and Ford that have established plants producing particular parts, components, and accessories in some two dozen countries. At the same time, practically no automobiles and automobile parts are imported into the United States from developing countries under tariff items 807.00 and 806.30.

The Changing Scope of Intra-industry Trade 1/

The preceding considerations point to the increasing importance of intra-industry specialization in manufactured trade between developed and developing countries. This proposition is supported by the results of emprical studies by Finger and Kreinen, Wolter, and the present author. The studies show that the extent of intra-industry specialization increased over time in trade with the newly-industrializing or semi-industrial developing countries

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1/ In the following, the expression "intra-industry trade" and "intra-industry specialization will be used interchangeably.

as well as with countries at lower levels of development.

Using an index of export similarity, Finger and Kreinen have concluded that "the /manufactured/ export pattern of the Semi-Industrial LDC has become markedly more similar to the export patterns of the Old EEC /i.e. the Common Market of the Six/ and the United States, and slightly more similar to the export pattern of Japan."[1/] Changes in the same direction have been observed in countries at lower levels of development, although the export structure of these countries has remained more dissimilar to that of the developed countries.

The increased similarity of the export structure of developed and developing countries is indicative of the growing importance of intra-industry specialization between developed and developing countries. This conclusion is confirmed by Wolter who examined changes over time in the extent of intra-industry specialization in Germany's trade in manufactured goods with various groups of countries.

Wolter has found that, between 1969 and 1977, the extent of intra-industry specialization increased substantially in Germany's trade with the newly-industrializing developing countries and with other developing countries while it increased much less in trade with the developed countries and declined in trade with the centrally planned economies. Nevertheless, the extent of intra-industry specialization continued to be the highest in trade with the developed countries, followed by the newly-industrializing developing

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1/ J. M. Finger and M. E. Kreinin, "A Measure of 'Export Similarity' and the Possible Uses," *Economic Journal*, December 1979, p. 909.

countries, the centrally planned economies, and the other developing countries.[1/]

Wolter's calculations have been made using the three-digit breakdown of the U.N. Standard International Trade Classification (SITC). The present author has employed a 91 industry classification scheme, consisting of 3 and 4 digit SITC items and their combinations, that defines an industry to include commodities with high substitution elasticities in production.[2/] The author has made estimates for the United States, Germany, the United Kingdom, and Japan for the years 1969 and 1979.[3/] For each of these countries, Table 2 shows the extent of intra-industry specialization on a scale from 0 to 1 in trade with developed countries (DC), centrally planned economies (CPE), newly-industrializing developing countries (NIC), oil-importing less developed countries (LDC), and oil-exporting developing countries (OPEC).

In 1979, the extent of intra-industry specialization in manufactured trade with developed countries was the highest in the United Kingdom and Germany; they were followed by the United States, with Japan far behind. The greater degree of intra-industry specialization in the first two countries is explained by their participation in the European Common Market where the

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1/ Frank Wolter, "Restructuring for Import Competition from Developing Countries, II: The Case of the Federal Republic of Germany" *Journal of Policy Modeling*, May 1980, Table 9. -- The results further show that the extent of intra-industry specialization is greater with the countries of North America and Western Europe than with Japan and it is greater in trade with the oil-importing than with the oil-exporting developing countries.

2/ The same classification scheme was used in the author's earlier studies referred to above.

3/ The extent of intra-industry trade has been estimated by utilizing a formula developed by Aquino in the modified form earlier used by the author. Aquino's original formula has been used by Wolter in the paper cited above. For references and the formula used in making estimates, see the Appendix.

Table 2

The Extent of Intra-Industry Specialization in the United States, Germany, United Kingdom and Japan: Trade with Various Country Groups[1/]

		DC	CPE	NIC	LDC	OPEC	WORLD
United States	1969	.602	.215	.341	.137	.013	.568
	1979	.672	.269	.407	.250	.011	.611
	Ratio	1.12	1.25	1.19	1.82	0.85	1.08
Germany	1969	.699	.289	.208	.069	.009	.605
	1979	.772	.280	.376	.169	.014	.666
	Ratio	1.10	0.97	1.81	2.45	1.56	1.10
United Kingdom	1969	.556	.283	.263	.152	.027	.617
	1979	.797	.243	.386	.432	.093	.763
	Ratio	1.43	0.86	1.40	2.84	3.44	1.24
Japan	1969	.378	.142	.174	.045	.007	.333
	1979	.393	.137	.313	.087	.004	.275
	Ratio	1.04	0.96	1.80	1.93	0.57	0.83

1/ For explanation, see text and appendix.

elimination of tariffs has been conducive to such trade.[1/] Also, its entry in the European Common Market in the early seventies explains that between 1969 and 1979 the extent of intra-industry specialization increased the most in the United Kingdom, where the ratio of the 1979 to 1969 results were 1.43 as compared to 1.12 in the United States, 1.10 in Germany, and 1.04 in Japan.

In turn, its long history of protectionism contributed to the low level of intra-industry specialization in trade with developed countries, and the small increase shown between 1969 and 1979, in Japan. This conclusion also applies to trade with developing countries, where Japan exhibits a substantially lower degree of intra-industry specialization than the other three countries.

At the same time, in all four countries, the 1969-1979 period saw a rapid increase in the extent of intra-industry specialization in trade with both the newly-industrializing developing countries[2/] and the group of oil-importing less developed countries. The ratios of the 1979 to 1969 results in trade with the two groups of countries, respectively, were 1.19 and 1.82 in the United States, 1.81 and 2.45 in Germany, 1.40 and 2.48 in the United Kingdom, and 1.80 and 1.93 in Japan.

The extent of intra-industry specialization in trade with developing countries was already high in 1969 in the United Kingdom and the United States,

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1/ Bela Balassa, "Tariff Reductions and Trade in Manufactures Among Industrial Countries," *op. cit.*

2/ Newly-industrializing countries have been defined as countries that had per capita incomes between $1400 and $3500 in 1977 and where the share of manufacturing in the gross domestic product was 20 percent or higher in 1977. The group include Argentina, Brazil, Chile, Mexico, Uruguay, Greece, Portugal, Spain, Turkey, Yugoslavia, Israel, Hong Kong, Korea, Singapore, and Taiwan (Following the usual practice, Israel with per capita incomes of $4120 has been included in the group that excludes Ireland with per capita incomes of $3476). The data originate in the *1977 World Bank Atlas*, (Washington, D.C., 1980) and the *World Development Report, 1979* (Washington, D.C. 1979).

reflecting the effects of relatively liberal policies towards the manufactured exports of the developing countries and, in the case of the United Kingdom, Commonealth preference. In turn, the extent of intra-industry specialization in trade with the two groups of developing countries remained at a level much below that of the other three countries in Japan where protection was the strongest.

Excepting the United Kingdom, the extent of intra-industry specialization was considerably higher in trade with the newly-industrializing developing countries than with the oil-importing less developed countries, indicating the increased importance of intra-industry specialization in countries at higher levels of development. In the case of the U.K., the results are explained by the effects of Commonealth preference that benefited several large less developed countries but did not affect the newly-industrializing developing countries other than Hong Kong.

At the same time, apart from the United States, the extent of intra-indust specialization in trade with the centrally planned economies declined between 1968 and 1979 to a level much below that in trade with the newly-industrializing developing countries. Finally, trade with the OPEC countries is characterized by inter-industry specialization.

Conclusions and Policy Implications

The increasing importance of intra-industry trade between developed and developing countries points to the conclusion that the adverse effects of imports from the developing countries on particular industries of the developed countries have been much exaggerated. As Wolter notes, "With the increase in intraindustry trade, adjustment can often take the form of reorganizing production within existing firms by changing the product mix, product differentiation, upgrading, and so forth, at their original location"[1/]

Thus, horizontal specialization entails a shift to higher value-added products in the developed countries as simple lower value-added products are imported from the developing countries. In turn, vertical specialization involves the exchange of parts, components and accessories requiring skilled and technical labor, more sophisticated technology, and physical capital.

The importation of inputs that use largely unskilled labor also lowers the cost of production in the developed countries, thereby increasing export possibilities and/or leading to more effective import competition. This is the case, for example, in the textiles industry where grey fabrics imported from developing countries are transformed into higher value products.

At the same time, intra-industry trade involves little adjustment cost in the developed countries. This is the situation, in particular, in the case of horizontal specialization, since firms can change their product composition and workers can be redirected within the firm. In fact, the rise of imports may benefit the firm and its workers through shifting to more profitable lines of production and the upgrading of the labor force. And, reducing product variety may provide further gains through the use of specialized machinery and learning by doing.

Adjustment costs associated with vertical specialization, too, will be relatively low. In cases when the same firm produces several parts or components, the shift can be accomplished within the firm. And even if this was not the case, the skills used in the production of particular parts, components, and accessories are likely to be transferable to the production

of others.

Exploiting comparative advantage through inter-industry specialization, however, involves adjustment costs. At the same time, these costs decline with the length of the period of adjustment. In this connection, the experience of New England in the United States is of particular interest.

New England provides an example of successful adjustment. With the relocation of the textiles and shoe industries to the South of the United States, New England has shifted to the production of high technology products, such as computers, electronic equipment and instruments. Following the near-exhaustion of the labor supply, these industries have recently expanded from the state of Massachusetts northwards where they utilize the skills of workers in declining industries. It has been reported, for example, that "because they had done stitching in the old shoe factory ... Littletown /New Hampshire/ workers were adept at learning the wiring, assembling and other hand work required for an electronic subcontractor."[1/] Also, in Berlin, New Hampshire, "A Converse sneaker factory closed in 1979, primarily because of the area's strength in computer and electronics."[2/]

The case of the shoe workers conflicts with the claim as to the practical impossibility of moving workers from one industry to another.[3/]

1/ *The New York Times*, October 20, 1980.

2/ *Ibid.*

3/ The author recalls a statement made at a World Bank Seminar on Industrialization and Trade Policies in the 1970s, held in October 1972, by Nat Goldfinger a senior advisor to the AFL-CIO on trade matters, according to whom the period of adjustment in the shoe industry was 50 years!

The transferability of skills is also indicated by a study of 120 occupational categories in 58 industries that cover all the major developed countries.[1/] And in cases when skills are not directly transferable, retraining programs may be employed and the normal attrition of the labor force may be reinforced by the application of early retirement provisions.[2/]

Early retirement provisions, together with normal attrition and retraining, will determine the speed at which decreases in the production of a particular industry may be acceptable to the developed countries. At the same time, it should be emphasized that, apart from the push emanating from technological change and imports, there is a pull from other industries as indicated by the example of the sneaker factory. 'Pull' and 'push' factors also operate within individual industries as imports in part take the place of the abandoned home production of low-value added products of low domestic profitability and in part prompt the upgrading of home production for domestic use as well as for exports.

These considerations indicate the benefits developed countries would derive from increasing the exchange of manufactured goods with the developing countries at rates exceeding the projections made for the period 1978-90. Increased imports would be desirable, in particular, in textiles and clothing, where the Multifiber Arrangement may serve as a vehicle for this purpose. The aim should be to reach the maximum growth of imports that is

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1/ Manuel Zymelman, *Occupational Structure of Industries*, Washington, D.C., World Bank, 1980.

2/ This point is made by Herbert Giersch who eloquently argues the need for adjustment in the developed countries to imports from the developing countries (Herbert Giersch, *A European Look at the World Economy*. The twelfth Annual William K. McInally Memorial Lecture, delivered at the University of Michigan on April 7, 1978, Ann Arbor, University of Michigan, Graduate School of Business Administration, 1978.

compatible with an acceptable speed of adjustment in the developed countries.

In this way, one could transform the Multifiber Arrangement from an instrument of protection to one of adjustment. The opportunity for such a transformation is provided by the 1981 renegotiation of the Arrangement. Apart from allowing for a satisfactory overall growth of imports from traditional sources, it would be necessary to ensure markets for newly-emerging exporters and to modify the provisions of the 1977 Arrangement that increased the discretion of developed countries for unilateral action and reduced the flexibility of the developing countries to shift products among individual categories.[1/]

Rather than *ex ante* quantitative limitations as under the Multifiber Arrangement, *ex post* safeguards should be utilized in the event that a sudden surge of imports causes serious injury in other industries of the developed countries. This, in turn, would require rectifying the failure of the Tokyo Round of Multilateral Trade Negotiations to reach agreement on an international safeguard code. The newly-established code should provide for the surveillance of national practices as well as for the resolution of conflicts in cases when safeguard measures have been employed.

One may envisage a two-stage procedure, under which national authorities could impose safeguard measures unilaterally, subject to certain conditions.[2/] These conditions would include the provision that the share

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1/ For a detailed discussion, See Donald M. Keesing and Martin Wolf, *Textile Quotas against Developing Countries,* Thames Essay No. 23, Trade Policy Research Centre, London, 1980.

2/ The following discussion draws on the author's "The 'New Protectionism' and the International Economy" and "The Tokyo Round and the Developing Countries" cited above.

of imports from the developing countries in the domestic consumption is not reduced, that the safeguards are not invoked against the least developing countries, and that the application of the safeguard measures remains temorary. The temporary nature of the safeguard measures would be expressed by their limited duration, the progressive liberalization of import restrictions during the period of their application, and the requirement that the re-imposition of safeguards be countenanced by an international forum.

The application of these provisions would allow for speedy action on the part of the developed countries without the need for agreement on the international level. Developing countries could, however, bring complaints under the safeguard code to an international forum if the provisions are not respected, and this forum would countenance an extension of the period of application of safeguards only if appropriate adjustment measures have been taken. The provision of the code should also apply to the safeguard measures presently employed that would be subject to review under the code.

Appendix

The author originally estimated the extent of intra-industry specialization as an unweighted average of "representative ratios," defined as the ratio of the absolute difference between exports and imports to the sum of the exports and imports in each industry.[1/] The formula is shown in equation (1).

$$(1) \quad \frac{1}{n} \sum \frac{|X_i - M_i|}{(X_i + M_i)}$$

Grubel and Lloyd subsequently calculated trade-weighted rather than unweighted averages of these ratios and attempted to adjust for the extent of trade imbalance.[2/] In turn, Aquino showed that the Grubel-Lloyd adjustment for trade imbalance does not provide consistent results and proposed an alternative for consistent measurement.[3/] The present author made use of Aquino's formulation but made adjustment for the imbalance in total trade rather than in trade in manufactured goods as Aquino had done, so as to take account of inter-industry specialization between primary and manufactured goods.[4/] The same procedure has been applied in the present paper except that, following Grubel-Lloyd and Aquino, the results obtained have been deducted from 1. This formulation has the advantage that changes over time in the extent of intra-industry trade are more directly observable from the results.

1/ Bela Balassa, "Tariff Reductions and Trade in Manufactures Among Industrial Countries," *op. cit.*

2/ Herbert G. Grubel and P. J. Lloyd, *Intra-Industry Trade,* London, 1975.

3/ Antonio Aquino, "Intra-Industry Trade and Inter-Industry Specialization as Concurrent Sources of International Trade in Manufactures," *Weltwirtschaftliches Archiv*, 1978.

4/ Bela Balassa, Intra-Industry Trade and the Integration of Developing Countries in the World Economy," *op. cit.*

The relevant formula is shown in equation (2) where X_t and M_t refer to total exports and imports, respectively.

$$(2)\quad 1 - \frac{\Sigma|X_i^e - M_i^e|}{\Sigma(X_i^e - M_i^e)},$$

$$\text{where } X_i^e = X_i \frac{\frac{1}{2}\,\Sigma\,(X_i+M_i)}{X_t} \text{ and } M_i^e = M_i \frac{\frac{1}{2}\,\Sigma\,(X_i+M_i)}{M_t}$$

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