

Bela Balassa and Constantine Michalopoulos

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# **The Extent and the Cost of Protection in Developed— Developing – Country Trade**

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# 23

## The Extent and the Cost of Protection in Developed–Developing-Country Trade

BELA BALASSA AND CONSTANTINE MICHALOPOULOS

### Introduction

The focus of this paper is the measures of protection applied to trade between developed and developing countries. This choice reflects concern with the adverse repercussions of recently imposed protectionist measures in the two groups of countries as well as the increasing importance of mutual trade for their national economies.

The paper analyzes the extent and the cost of protection in developed and in developing countries, with special attention to measures affecting trade between the two groups of countries. The first section reviews the tariff and nontariff measures applied by the developed countries and provides empirical evidence on the cost of protection in these countries. We then examine the use of protective measures in the developing countries and indicate the resulting cost to their national economies. In conclusion we briefly indicate the policy implications of the findings.

### Protection in the Developed Countries

#### TARIFF PROTECTION

The successes of the postwar period with tariff disarmament in the developed countries are well known and do not require detailed discussion. While the original purpose had been to undo the damage resulting from the competitive imposition of import duties during the 1930s, tariffs in the major developed countries were reduced

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From the Johns Hopkins University, Baltimore, Maryland; and the World Bank, Washington, D.C.

below predepression levels by the end of the 1950s. These reductions, undertaken on an item-by-item basis, were followed by across-the-board tariff reductions in the framework of the Dillon Round (1960–1961), the Kennedy Round (1964–1967), and the Tokyo Round (1974–1977) of trade negotiations.

Taken together, in the course of the Dillon, Kennedy, and Tokyo Round negotiations, tariffs on manufactured goods imported by the developed countries were lowered, on the average, by nearly two-thirds. Table 1 shows that post–Tokyo Round tariff levels in major developed countries averaged 6 to 7 percent for finished manufactures and were even lower for semimanufactures and raw materials. Apart from overall reductions, the procedure applied in the Tokyo Round also lessened the dispersion of tariffs as higher tariff rates were cut proportionately more than lower rates.

The question arises, however, if the remaining tariffs bear disproportionately on products imported from the developing countries. There are two aspects to this question. First, whether tariffs on products of interest to developing countries are higher (or lower) at each level of processing; second, whether there is tariff escalation that affects developing-country exports of manufactures.

Table 1 shows that manufactured products of interest to the developing countries are in general subject to higher tariffs than products on the same level of fabrication originating in the developed countries. Thus, post–Tokyo Round tariffs on all imports of semimanufactures and finished manufactures, and on such imports from developing countries, respectively, average 4.9 and 8.7 percent in the United States, 6.0 and 6.7 in the European Common Market, and 5.4 and 6.8 percent in Japan (Table 1).

Furthermore, there is evidence of tariff escalation. Thus, post–Tokyo Round average tariffs on raw materials, semimanufactures, and finished manufactures are 0.2, 3.0, and 5.7 percent for the United States; 0.2, 4.2, and 6.9 percent for the European Common Market; and 0.5, 4.6, and 6.0 percent for Japan (Table 1).<sup>1</sup>

The cited averages pertain to all processing chains, several of which have little relevance for most developing countries. Such is the case in particular for petroleum-based products and for metal products, where processing is highly capital-intensive and requires a considerable degree of technological sophistication that is found only in developing countries at higher levels of industrialization.

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<sup>1</sup> The table reports import-weighted tariff averages that are relevant for comparisons of overall tariff averages and tariffs on products exported by the developing countries. As noted in Balassa and Balassa (1984), unweighted tariff averages show a similar pattern of escalation. At the same time, unweighted averages are higher than the weighted averages as the latter are reduced by reason of the fact that high (low) tariffs that discourage (encourage) imports are given low (high) weights.

**TABLE 1.**  
Post-Tokyo Round Tariff Averages in the Major Developed Countries

	<i>Tariffs on Total Imports</i>				<i>Tariffs on Imports from LDCs</i>
	<i>Raw Materials</i>	<i>Semimanufactures</i>	<i>Finished Manufactures</i>	<i>Semi- and Finished Manufactures</i>	<i>Semi- and Finished Manufactures</i>
United States	0.2	3.0	5.7	4.9	8.7
European Common Market	0.2	4.2	6.9	6.0	6.7
Japan	0.5	4.6	6.0	5.4	6.8

*Source:* General Agreement on Tariffs and Trade, *The Tokyo Round of Multilateral Trade Negotiations*, II—Supplementary Report (January 1980): 33–37.

Excluding these products would raise the extent of tariff escalation even further.

Table 2 provides data on average tariffs in the developed countries for products in eleven processing chains that are of interest to developing countries and, among them, to countries at lower levels of industrial development. The raw materials in question weigh heavily in the exports of the countries concerned, and the processing of these materials is frequently within their technical competence. Also, with the major exception of paper, processing is not a highly capital-intensive activity.

It is apparent that, except for wood, tariffs escalate in all cases. But this exception is more apparent than real, since the major input into furniture is semimanufactured wood that has lower tariffs. And the overall importance of tariff escalation is indicated by the fact that the products in question account for 47 percent of the exports of nonfuel primary and semiprocessed products from the developing to the developed countries but for only 11 percent of manufactured exports. At the same time, the data reported in Table 2 exclude textiles and clothing, iron and steel, and footwear, where there is also tariff escalation but where quantitative import restrictions tend to be the effective barrier to developed-country markets.

Escalation of tariffs can cause effective rates of protection to exceed nominal rates by a substantial margin. At the same time, for developing-country producers, the relevant consideration is the protection of the processing margin (value-added), or effective protection, rather than the nominal tariffs levied on individual products.

Data provided in an earlier paper by Yeats (1974) permit estimating effective rates in the post–Tokyo Round situation for three semimanufactured products: processed cocoa (15.8 percent), leather (13.5 percent), and vegetable oil (70.2 percent). In the cases considered, the ratio of effective to nominal tariffs ranges from 3.2 (leather) to 8.7 (vegetable oil); the differences in the ratios are explained largely by interindustry differences in the share of value-added in output.<sup>2</sup>

Such protection tends to discriminate against industrial processing in these countries and, in particular, in countries at lower levels of industrial development. Other things being equal, a 20 percent effective rate of protection in developed countries means that firms engaged in processing in a developing country would have to compress their processing margin (value-added) by 25 percent in order to compete with processing activities in the developed coun-

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<sup>2</sup> The Tokyo Round did little to reduce the extent of tariff escalation; the ratios of effective to nominal protection are similar to those calculated by Yeats (1974) for the post–Kennedy Round situation.

**TABLE 2.**  
Pre- and Post-Tokyo Round Tariffs for Twelve Processing Chains

<i>Stage of Processing</i>	<i>Product Description</i>	<i>Tariff Rate<sup>a</sup></i>		<i>1981 Developing Countries Exports to Industrial Countries<sup>b</sup> (US\$ millions)</i>
		<i>Pre-Tokyo</i>	<i>Post-Tokyo</i>	
1	Fish, crustaceans, and molluscs	4.3	3.5	1,145
2	Fish, crustaceans, and molluscs, prepared	6.1	5.5	580
1	Vegetables, fresh or dried	13.3	8.9	1,291
2	Vegetables, prepared	18.8	12.4	20
1	Fruit, fresh, dried	6.0	4.8	2,409
2	Fruit, provisionally preserved	14.5	12.2	2,474
3	Fruit, prepared	19.5	16.6	1,321
1	Coffee	10.0	6.8	4,385
2	Processed coffee	13.3	9.4	288
1	Cocoa beans	4.2	2.6	994
2	Processed cocoa	6.7	4.3	433
3	Chocolate products	15.0	11.8	43
1	Oil seeds and flour	2.7	2.7	579
2	Fixed vegetable oils	8.5	8.1	1,374
1	Unmanufactured tobacco	56.1	55.8	1,117
2	Manufactured tobacco	82.2	81.8	39
1	Natural rubber	2.8	2.3	2,045
2	Semimanufactured rubber (unvulcanized)	4.6	2.9	3
3	Rubber articles	7.9	6.7	390

Stage of Processing	Product Description	Tariff Rate <sup>a</sup>		1981 Developing Countries Exports to Industrial Countries <sup>b</sup> (US\$ millions)
		Pre-Tokyo	Post-Tokyo	
1	Raw hides and skins	1.4	0.0	144
2	Semimanufactured leather	4.2	4.2	437
3	Travel goods, handbags etc.	8.5	8.5	1,082
4	Manufactured articles of leather	9.3	8.2	748
1	Vegetable textiles yarns (excluding hemp)	4.0	2.9	150
2	Twine, rope and articles; sacks and bags	5.6	4.7	203
3	Jute fabrics	9.1	8.3	73
1	Silk yarn, not for retail sale	2.6	2.6	38
2	Silk fabric	5.6	5.3	176
1	Semimanufactured wood	2.6	1.8	1,241
2	Wood panels	10.8	9.2	744
3	Wood articles	6.9	4.1	524
4	Furniture	8.1	6.6	681
1	TOTAL			27,171
MEMORANDUM ITEMS				
Total Manufactures				57,910
Textiles, Footwear, Iron and Steel				23,373
Manufactured Exports Subject to Tariff Escalation (except textiles, footwear, iron and steel)				6,490
Total Nonfuel Primary				43,792
Nonfuel Primary Subject to Tariff Escalation				20,681

<sup>a</sup> Unweighted average of the tariffs actually facing developing-country exports (i.e., Generalized System of Preference, Most-Favoured-Nation, other special preferential rates, etc.) in the market of EEC, Japan, Australia, New Zealand, Canada, Austria, Switzerland, Finland, Norway, and Sweden.

<sup>b</sup> Includes exports to the United States, Japan, and the EEC.

Source: Alexander J. Yeats, The Influence of Trade and Commercial Barriers on the Industrial Processing of Natural Resources, *World Development* 9(5)(May 1981): 485-494 and World Bank Trade Data System.

tries. With some of the costs of processing, including the cost of capital, not being compressible, tariff escalation in the developed countries thus puts industrial processing in the developing countries at a considerable disadvantage.

### NONTARIFF BARRIERS

Parallel with reductions in tariffs, quantitative import restrictions were liberalized during the 1950s in Western Europe, where these restrictions had been applied largely for balance-of-payments purposes after World War II. Import liberalization also proceeded, albeit at a slower rate, in Japan—where restrictions had been employed on balance-of-payments as well as on infant-industry grounds, although a number of products remained subject to quantitative import restrictions until the early 1970s. Finally, the United States continued with its broadly liberal trade policy and abandoned the American selling-price provisions on coal-tar-based chemicals but imposed limitations on the imports of Japanese cotton textiles.

Agriculture was an exception to the process of import liberalization during the postwar period. In fact, apart from the United States (a large net exporter of food and feeding stuffs), agricultural protection in the developed countries was reinforced after 1960. The European Community has encouraged high-cost production by setting high domestic prices in the framework of the Common Agricultural Policy, thereby turning an import surplus in major foods into an export surplus. Also, with higher wages raising domestic production costs, agricultural protection has intensified in Japan.

Increased use has been made of nontariff protection in manufacturing industries as well. The developed countries have generally refrained from applying the GATT safeguard clause; they have relied instead on so-called voluntary export restraints and orderly marketing arrangements to limit imports.

Measures of nontariff protection on textiles and clothing apply exclusively to developing-country exporters. Thus, while the Long-Term Arrangement Regarding Cotton Textiles (1962) was originally aimed largely at Japan, its successor, the Multifiber Arrangement (1979), limits the imports of textiles and clothing from the developing countries. And whereas the MFA earlier permitted annual import growth of 6 percent in volume, in the course of its subsequent renewals and reinterpretations it has become increasingly restrictive. While Japan is not party to the MFA, there is evidence of informal limitations on the imports of textiles and clothing from the developing countries.

Japan severely limits the importation of footwear from all sources, whereas several of the larger European countries restrict

footwear imports from the developing countries alone. Finally, during the 1970s, the United States limited the imports of nonrubber footwear from Korea and Taiwan (China) and the International Trade Commission has again recommended the imposition of restrictions on the importation of footwear.

Since the early 1970s, nontariff measures have also assumed increased importance for steel. In the United States there are formal and informal limitations on the importation of carbon and specialty steel from Japan, from the European Community, and from several developing countries; the Community restricts imports from Japan and from developing countries; and informal measures limit steel imports from Korea into Japan.

France and Italy have long restricted automobile imports from Japan. In recent years they have been joined by Belgium, Germany, and the United Kingdom. In turn, the United States negotiated limitations on the imports of automobiles from Japan in 1981 but let the agreement expire in early 1985.

In the electronics industry, the European Community has imposed limitations on the imports of several products from Japan and, to a lesser extent, Korea and Taiwan. In turn, the United States has eliminated earlier restrictions on the importation of color television sets. Finally, informal barriers limit the importation of telecommunication equipment into Japan.

Table 3 shows the extent of nontariff barriers applied by the major developed countries following recent increases in these barriers. The table provides information on the use of nontariff measures affecting imports from the other developed countries, from the developing countries, and from all countries taken together, in the United States, the European Common Market, and Japan, based on a joint World Bank–UNCTAD research effort.

Nontariff barriers have been defined to include all transparent border measures that directly or indirectly limit imports. Quantitative import restrictions and so-called voluntary export restraints limit imports directly. In turn, variable import levies that equalize domestic and import prices, minimum price requirements for imports, voluntary export price agreements, as well as tariff quotas involving the imposition of higher duties above a predetermined import quantity, have an indirect effect on imports.

Table 3 shows the share of imports subject to nontariff measures, calculated by using world trade weights. The use of world trade weights allows for differences in the relative importance of individual tariff items in international trade while abstracting from the idiosyncracies of national protection. In contrast, calculating for a particular country the percentage share of own imports subject to restrictions is equivalent to using own imports as weights, which

**TABLE 3.**  
Relative Shares of Imports Subject to Nontariff Measures, May 1985 (World Trade Weighted)<sup>a</sup>

	<i>Nonfuel Products</i>	<i>Agriculture</i>	<i>Manufacturing</i>	<i>Textiles and Clothing</i>	<i>Footwear</i>	<i>Iron and Steel</i>	<i>Electrical Machinery</i>	<i>Transport Equipment</i>	<i>Rest of Manufacturing</i>
UNITED STATES									
Imports from									
all countries <sup>b</sup>	6.4	11.5	5.6	47.8	0.1	21.8	0.0	0.0	0.4
industrial countries	3.4	11.7	2.7	25.5	0.0	24.6	0.0	0.0	0.0
developing countries	12.9	11.8	14.4	65.3	0.1	4.5	0.0	0.0	1.9
EUROPEAN COMMUNITY									
Imports from									
all countries <sup>b</sup>	13.9	37.8	10.1	42.4	10.2	37.9	4.2	3.9	3.8
industrial countries	10.5	46.7	5.7	13.6	0.3	33.7	3.1	3.8	2.6
developing countries	21.8	27.5	21.4	65.2	12.5	28.9	4.7	4.6	5.3
JAPAN									
Imports from									
all countries <sup>b</sup>	9.6	33.8	5.4	14.0	39.6	0.0	0.0	0.0	6.0
industrial countries	9.5	35.7	5.5	14.0	34.3	0.0	0.0	0.0	7.1
developing countries	10.5	30.2	5.4	14.2	42.2	0.0	0.0	0.0	1.9

<sup>a</sup> The data collected by Nogues, Olechowski, and Winters for 1983 have been adjusted for the termination of the U.S.-Japanese automotive agreement. Other changes in protection occurring between 1983 and 1985 have been relatively minor.

<sup>b</sup> All countries include the socialist countries of Eastern Europe, hence the overall average does not necessarily lie between average for imports from the industrial and from the developing countries.

Source: Julio J. Nogues, Andrzej Olechowski, and L. Alan Winters, The Establishment of Non-tariff Barriers to Industrial Countries' Imports. World Bank Department Research Department Discussion Paper No. 115 (January 1985) and the sources cited therein.

means that the more restrictive the measure the lower its weight in the calculations; in the extreme, prohibitive tariffs have zero weight.<sup>3</sup> Also, calculating the percentage share of tariff items has the disadvantage that it gives equal weight to all items, even though they may vary in importance to a considerable extent.<sup>4</sup>

Table 3 reports nontariff barriers for nonfuel imports and, within this total, for agricultural and for manufactured imports; it further disaggregates manufactured goods into textiles and clothing, footwear, iron and steel, electrical machinery, transport equipment, and other manufactures. Fuels have not been included because the nontariff measures applied do not appear to aim at protecting the domestic production of competing fuels.

The results are indicative of the high protection of EEC and Japanese agriculture, where most commodities competing with domestic production encounter nontariff barriers. With protection applying chiefly to temperate-zone products, these barriers affect a somewhat higher proportion of agricultural imports from developed than developing-country suppliers. The proportions are about the same in the case of the United States, where the extent of nontariff barriers of agricultural products is relatively low.

In the United States and the European Community, nontariff barriers on manufactured imports discriminate to a considerable extent against developing-country exporters. This discrimination is largely due to the restrictions imposed on developing-country exports of textiles and clothing in the framework of the Multifiber Arrangement (MFA). As noted above, Japan is not party to the MFA but is said to use informal measures to limit its imports of textiles and clothing from the developing countries; in fact, as shown below, its imports have been growing at a lower rate and account for a smaller proportion of domestic consumption than in the United States and the European Common Market.

The data reported in Table 3 do not include other border measures that could, but may not, be used with protective effect, such as antidumping and countervailing duties, price monitoring, and investigations of alleged practices that may give rise to the imposition of such duties and automatic import authorizations. There is some

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<sup>3</sup> For example, France limits the imports of automobiles from Japan to 3 percent of domestic sales while, for several years, the United States restricted imports from Japan to about 20 percent of domestic sales. Correspondingly, the own-import ratio was substantially lower in France than in the United States, even though nontariff measures were much more restrictive in the first case than in the second.

<sup>4</sup> At the same time, to the extent that all, or most, countries apply quantitative import restrictions to the same commodities, for example textiles, their share in world trade will be lowered, thereby affecting the world trade-weighted average of nontariff measures.

**TABLE 4.**  
Relative Shares of Nontariff Measures and Other Border Measures  
(all products less fuels; all countries; world trade weighted)

	<i>Nontariff Measures<sup>a</sup></i> (1)	<i>Other Border Measures<sup>b</sup></i> (2)	<i>Sum of Columns (1) and (2)</i> (3) <sup>c</sup>
European Community	13.9	11.6	21.0
United States	6.4	3.4	9.5
Japan	9.6	0.0	9.6

<sup>a</sup> See Table 3.

<sup>b</sup> Countervailing and antidumping duties, price surveillance, price investigation, quantity surveillance, and automatic licensing.

<sup>c</sup> The figures in this column are less than the sum of those in the columns reported because some trade flows face several barriers.

Source: See Table 3.

evidence that these practices have been applied in certain circumstances in lieu of safeguards and with both the intent and effect of protecting domestic industry rather than simply offsetting distortions introduced by the exporter (Finger, Hall, and Nelson, 1982). Their use has also increased since the late 1970s (Nogues, Olechowski, and Winters, 1985).

Nevertheless, given the legitimate role that such practices can play in trade, they have to be treated differently from other nontariff measures. Thus, rather than eliminating the measures themselves, one should assure that they are not used for protective purposes.

As an illustration, the nontariff measures reported in Table 3, as well as the other border measures just described, are reported in Table 4. It should be noted, however, that for lack of information, the data on other border measures do not include Japan.

The data reported in Table 3 and 4 do not include health and safety measures and technical standards that may be used with a protective intent.<sup>5</sup> Nor do the data comprise various informal measures that are prevalent in countries which rely to a considerable extent on administrative discretion rather than on codified rules to limit imports. Finally, the data are limited to trade-related measures with the exclusion of domestic measures (e.g., producer subsidies and regional development measures) that bear on trade indirectly through their effect on domestic production.

Despite increasing barriers to trade, the share of imports from the developing countries in the consumption of manufactured goods

<sup>5</sup> The only country covered in the paper for which such information is available is Japan. According to UNCTAD, health and safety measures and technical standards pertain to 48 percent of Japan's imports from industrial countries and to 17 percent of its imports from developing countries. See UNCTAD, *Problems of Protectionism and Structural Adjustment*, Report by the Secretariat, Part I: Restrictions to Trade and Structural Adjustment TD/B/1039, January 28, 1985, Table 2.

**TABLE 5.**  
Relative Importance of Manufactured Imports from  
Developing Countries

	<i>Import-Consumption Ratio (in current prices)</i>			
	1973	1978	1981	1983
UNITED STATES				
Iron and steel	0.6	0.9	1.4	2.3
Chemicals	0.4	0.5	0.6	0.9
Other semimanufactures	0.9	1.5	1.7	1.9
Engineering products	0.7	1.3	2.0	2.6
Textiles	1.8	1.6	2.3	2.2
Clothing	5.6	11.3	14.0	15.1
Other consumer goods	1.9	3.7	4.8	5.2
All manufactures	1.1	1.8	2.4	3.0
EUROPEAN COMMON MARKET				
Iron and steel	0.4	0.4	0.6	0.7
Chemicals	0.5	0.6	0.8	1.1
Other semimanufactures	1.3	2.5	1.9	2.3
Engineering products	0.3	0.9	1.3	1.4
Textiles	2.6	3.7	4.1	4.4
Clothing	5.7	11.4	16.4	16.0
Other consumer goods	1.1	1.6	2.9	3.1
All manufactures	0.9	1.6	2.0	2.1
JAPAN				
Iron and steel	0.2	0.3	1.0	1.6
Chemicals	0.3	0.5	0.8	0.9
Other semimanufactures	1.0	0.9	0.9	0.9
Engineering products	0.2	0.3	0.5	0.4
Textiles	2.2	2.3	2.1	1.9
Clothing	7.6	7.4	8.9	8.2
Other consumer goods	0.8	1.1	1.3	1.5
All manufactures	0.7	0.8	0.9	1.0

Source: GATT, *International Trade*; United Nations, *Yearbook of Industrial Statistics*; and OECD, *Indicators of Industrial Activity*, various years.

by the major developed countries continued to rise during the last decade. Table 5 shows the relationship between manufactured imports from the developing countries and the consumption of manufactured products, defined as production plus imports less exports, in the United States, the European Community, and Japan. Information is provided on the developing-countries' market shares in the years 1973, 1978, 1981, and 1983.

There are no signs of a slowdown in the growth of the developing-countries' share in industrial countries' markets except for the group of other semimanufactures, which are heavily weighted by natural-resource products, and for the category of textiles and clothing, where the MFA has become increasingly restrictive. At the same

time, until recently, the import shares of textiles and clothing continued to rise, reflecting the upgrading of products exported by the developing countries in the face of limitations imposed on increases in volume. Furthermore, developing-country exporters increasingly shifted to the exportation of products that did not encounter barriers such as engineering goods and iron and steel, which later has subsequently become subject to restrictions.

The data further show that differences between the United States and the European Community, on the one hand, and Japan, on the other, were increasing over time as far as the share of imports from developing countries in their domestic consumption is concerned. Thus, while this share was 1.1 percent in the United States, 0.9 percent in the Common Market, and 0.7 percent in Japan in 1973, the corresponding shares were 3.0, 2.1, and 1.0 percent in 1983.

It appears, then, that although Japan is not a party to the MFA and has few formal barriers to imports from the developing countries (the major exception being footwear), it has increasingly lagged behind the other major developed countries in importing manufactured goods from the developing countries. Yet, with its rapid economic growth and the accumulation of physical and human capital, Japan has approached the other developed countries in terms of factor endowments and thus one would have expected it to resemble their import pattern more closely. The fact that the opposite has happened may be taken as an indication of the use of informal measures of protection against developing-country exports in Japan.

Note finally that, while increased protection through nontariff measures in developed-country markets has been accompanied by increased penetration of developing-country exports in these markets, this should not be interpreted to mean that such protection would not have involved an economic cost in the developed countries or would not have adversely affected developing countries. It rather means that protection has been concentrated in particular sectors and that developing countries have been able to alleviate its impact on their foreign-exchange earnings through export diversification and product upgrading.

#### THE COST OF PROTECTION

Apart from its adverse effects on foreign exporters, import protection imposes a cost on the domestic economy. Earlier estimates of the cost of protection in the developed countries were generally low, rarely attaining 1 percent of the gross national product. These estimates, however, failed to consider the losses involved in forgoing the exploitation of economies of scale in protected markets. Taking account of economies of scale, it has recently been estimated that

**TABLE 6.**  
Effects of Some Major VERs In Developed Countries<sup>a</sup>

	<i>Clothing</i>		<i>Automobiles</i>	<i>Steel</i>
	<i>USA</i> <i>1980</i>	<i>EC</i> <i>1980</i>	<i>USA</i> <i>1984</i>	<i>USA</i> <i>1985</i>
(1) Increased payments on imported goods, \$ million	988	1,050	1,778	1,530
(2) Loss of consumer surplus, \$ million	408	289 <sup>b</sup>	229	455
(3) Resource cost of producing the additional quantity domestically, \$ million	113	70	185	7
(4) Cost to the national economy in the protecting country (welfare cost), \$ million, (1) + (2) + (3)	1,509	1,409	2,192	1,992
(5) Jobs saved through protection, thousands	8.9	11.3	45.0	28.0
(6) Welfare cost per job saved, \$ thousand, (4)/(5)	169.6	124.7	48.7	71.1
(7) Average labor compensation, \$ thousand, (annual)	12.6	13.5	38.1	42.4
(8) Ratio of welfare cost to average compensation, (6)/(7)	13.5	9.2	1.3	1.7
(9) Lost revenues for exporters, \$ million	9,328	7,460	6,050	1,508
(10) Ratio of increased payments on imported goods to lost revenues for exporters, (1)/(9)	0.11	0.14	0.29	1.01

<sup>a</sup> U.S. dollar estimates are evaluated at current prices for the years indicated.

<sup>b</sup> Foregone tariff revenues, due to the quota introduction, are not included.

Source: Orsalia K. Kalantzopoulos, *The Cost of Voluntary Export Restraints for Selected Industries in the U.S. and the EC*. Washington, D.C.: World Bank.

protection has reduced potential output by about 10 percent in Canada (Harris, 1983, p. 115). Further losses are incurred in the event of the use of voluntary export restraints, which involve an income transfer to foreign exporters.

Table 6 reports available estimates on the welfare cost of voluntary export restraints, which have come into increased use in recent years. This cost consists of the loss of consumer surplus, the resource cost of producing the additional quantity domestically, and increased payments on imported goods as exporters charge higher prices for the limited quantity they sell. It has been calculated for clothing in the United States and the European Community and for automobiles and steel in the United States.

Rows (1) to (4) of the table show the components of the cost of protection, as well as its total, for the industries in question. Row (5) further indicates the number of jobs saved in the protected industries on the assumption that labor productivity is not affected

thereby. In turn, row (6) shows the welfare cost per job saved in the industries in question.

While the data refer to different years, this will hardly affect the results since prices changed little during the period. Thus, it is apparent that the welfare cost of saving a job is considerably higher in the clothing industry than in the case of automobiles and steel.

Data on the ratio of the welfare cost to average labor compensation, reported in row (8), are directly comparable across industries, since the numerator as well as the denominator of the ratio are expressed in the prices of the same year. The results show that this ratio was 13.5 in the United States and 9.2 in the EEC clothing industry while it was 11.3 in the U.S. automobile industry and 1.7 in the U.S. steel industry.

The welfare cost of saving a job in the protected industries thus exceeds the wages paid in these industries by a considerable margin, with the differences being by far the highest in the case of clothing, where the import limitations pertain to products originating in developing countries. The cost to the consumer, including higher prices for domestic products resulting from protection, exceeds even this figure. Nor do the estimates take account of job losses in other industries that are discriminated against by protection.

At the same time, while higher prices paid on imports represent a transfer to foreign suppliers, the volume of their exports is adversely affected by the protectionist measures applied. As shown in row (10) of Table 6, the transfer implicit in the higher prices paid to exporters compensated for hardly more than one-tenth of the loss in revenues owing to the reduced volume of exports. The corresponding ratio was 0.14 for automobiles; it was 1 for steel, where higher prices apparently offset for the loss in export volume.

Although similar calculations have not been made for agricultural products, comparisons of domestic and world market prices provide an indication of the relative costs of protection in various markets, although world market prices would rise if protection measures were dismantled. The calculations reported in Table 7 pertain to the 1978–1980 average, that is, before the rise in the value of the U.S. dollar had distorted international price relationships.

The cost of protecting domestic agriculture is indicated by the high ratio of domestic to world market prices in the European Community and Japan. In both cases, domestic prices exceeded world market prices by approximately one-half for wheat. In the Community the price differential exceeded 100 percent for maize; comparable data for Japan are not available. By contrast, domestic prices were slightly below world market prices for both wheat and maize in the United States.

The domestic prices of beef and veal were especially high in

**TABLE 7.**  
Nominal Protection Coefficients for  
Agricultural Products, 1978-1980<sup>a</sup>

	<i>US</i>	<i>EEC</i>	<i>Japan</i>
Wheat	0.90	1.52	1.49
Maize	0.85	2.10	n.a.
Beef and veal	0.81	1.36	2.41 <sup>b</sup>
Lamb and sheep	1.10	1.48	n.a.
Sugar	1.48	1.76	1.59

<sup>a</sup> The nominal protection coefficient is the ratio of domestic to world market prices.

<sup>b</sup> Data provided by the Australia-Japan Research Center, Australia National University, Canberra, Australia.

Source: U.S. Department of Agriculture.

Japan, exceeding the international price two to three times. In the EEC, the price differential surpassed one-third for beef and veal and approached one-half in the case of lamb and sheep. In the United States, domestic prices were slightly below world market prices for beef and veal and slightly above the prices for lamb and sheep.

While the United States protects the domestic production of sugar, the excess of domestic over world market prices for this commodity was greater in the EEC and Japan than in the United States. This situation has continued despite the overvaluation of the dollar. Also, the EEC countries have subsidized their sugar exports, with the subsidy reaching 1.2 billion in 1984. Over the last eight years, the Common Market exported 38 million tons of sugar as domestic output rose from 10.8 to 13.3 million tons and consumption declined. During the same period, U.S. sugar imports declined from 6 to 3 million tons (*The Economist*, August 10, 1985).

In conclusion, it should be emphasized that, apart from the measured cost imposed on the national economy, the protection of noncompetitive, low-productivity sectors has unfavorable long-term effects on the developed countries by postponing adjustment as well as the upgrading of labor. Nontariff barriers have particularly adverse effects by reducing competition, introducing discriminatory practices, and keeping out new entrants which frequently are developing countries. In particular, the Multifiber Arrangement has perverse effects in encouraging the upgrading of products in the developing countries while considerations of comparative advantage would call for such upgrading to occur in the developed countries.

Finally, high protection involves the misallocation of new additions to the capital stock. This is because, apart from safeguarding existing firms, protection provides an inducement for new investments in sectors where the developed countries have a comparative

disadvantage. Correspondingly, less capital is available to high-skill, high-technology industries where these countries possess important advantages. Ultimately, then, protection unfavorably affects economic growth in the developed countries as well as in their trading partners among developing countries.

## **Protection in the Developing Countries**

### **THE EXTENT OF IMPORT PROTECTION**

Comparable estimates on the level of protection and the share of imports subject to quantitative import restrictions are available for relatively few developing countries. At the same time, available information indicates that the scope of nontariff measures is much greater, and levels of protection are both higher and show greater variation, in these countries than in the developed countries.

Studies by Balassa and Associates (1971), Bhagwati (1978), Krueger (1978), and Balassa and Associates (1982) showed considerable differences in the trade regimes of the developing countries during the 1960s. These differences pertained to the protection of the manufacturing sector and the consequent bias against primary activities (in particular, agriculture) as well as to the extent of the bias against exports. The countries in question may be divided into three groups on the basis of the policies applied during this period.

The first group included Argentina, Brazil, Chile, Pakistan, and the Philippines, all of which highly protected their manufacturing industries, discriminated against primary production, and biased the system of incentives against exports. In these countries, the average net effective protection of the manufacturing sector, reflecting adjustment for the overvaluation of the exchange rate associated with protection, ranged between 40 and 150 percent.

The countries of the second group, including Colombia, Israel, and Mexico, had considerably lower levels of industrial protection. Also, the extent of discrimination against primary activities was less than in the countries of the first group. Nonetheless, there was substantial bias against manufactured exports, with value-added obtainable in domestic markets exceeding that obtainable in exporting by 40 to 90 percent compared with 120 to 320 percent in the first group.

Finally, in Korea, Singapore, and Malaysia, there was little discrimination against manufactured exports, with the excess of value-added obtainable in domestic markets over that obtainable in export markets ranging from 6 to 26 percent. The same conclusion applies to the primary exports of the countries of this group that did not discriminate against primary activities.

More recent estimates are available for several of these coun-

tries. They show little change in relative incentives to manufacturing and to primary production in the case of Korea. At the same time, reforms undertaken in the second half of the 1960s reduced, to a lesser or greater extent, the protection of manufacturing activities and discrimination against the primary sector in Brazil, Colombia, Mexico, and the Philippines. In turn, changes in the opposite direction occurred in Malaysia (Roger, 1985).

On the whole, however, while several developing countries had liberalized their trade regimes in the late 1960s, trade policies in most of these countries discriminate in favor of import substitution and against exports, and there is considerable dispersion in the effective protection provided to various economic activities. Also, in several large Latin American countries protection was increased again in response to the external shocks of the post-1973 period.

### THE COST OF PROTECTION

The cost of protection in developing countries can be rather high. Estimates for several of the countries cited above showed this cost to equal 9.5 percent of GNP in Brazil, 6.2 percent in Chile, 6.2 percent in Pakistan, 3.7 percent in the Philippines, and 2.5 percent in Mexico during the 1960s (Balassa and Associates, 1971).

These results were obtained in a partial equilibrium framework and do not allow for the losses of economies of scale in protected domestic markets. Subsequently, De Melo estimated the cost of protection for Colombia in a general equilibrium framework, incorporating intermediate products, nontraded goods, as well as substitution among products and among primary factors (De Melo, 1978). Excluding land reallocation within agriculture and postulating an optimal export tax for coffee, the cost of protection was estimated at 11.0 percent of GNP, assuming labor to be fully employed, and 15.8 percent, assuming that additional supplies of labor are available at a constant real wage.

De Melo's results are considerably higher than the estimates made in a partial equilibrium framework, even though Colombia was in the middle range among developing countries in terms of levels of protection. Thus, De Melo estimated effective protection to average 25 percent in the Colombian manufacturing sector, without an exchange-rate adjustment, while the comparable result in the Balassa study was 35 percent.

It would appear, then, that the estimates obtained in a partial equilibrium framework understate the cost of protection. Part of the reason is that estimates made in this framework do not allow for the fact that the cost of protection rises with the dispersion of interindustry rates of protection (Nugent, 1974, pp. 62-63). Yet the disper-

sion of protection rates is much greater in developing than in developed countries and, within the former group, in highly protected rather than less-protected economies.

### PROTECTION AND ECONOMIC GROWTH

Protection has traditionally been justified on the grounds that it will enable industries to grow up and eventually to confront foreign competition. The assumptions underlying this infant-industry argument is that protection is required on a temporary basis to offset the costs firms incur upon undertaking a new productive activity that will not be fully recouped by the firm itself but by the industry as a whole. This is because the firms initially entering upon a new activity will generate so-called externalities through labor training and technological improvements.

While these changes are supposed to permit productivity to increase more rapidly in protected infant industries of the developing countries than in the developed countries, the evidence suggests that protection has rather retarded productivity growth. Thus, in the early postwar period, the protected Latin American countries experienced virtually no increase in productivity (Bruton, 1967).

Also, in the 1960–1973 period, incremental capital-output ratios were the highest in Chile (5.5) and India (5.7), which had by far the highest protection levels. In turn, these ratios were the lowest in Singapore (1.8) and Korea (2.1), which had the lowest levels of protection. Finally, incremental capital-output ratios declined in countries such as Brazil (from 3.8 in 1960–1966 to 2.1 in 1966–1973) that reduced their levels of protection during the latter part of the period (Balassa and Associates, 1982, p. 3).

High incremental capital-output ratios reflect slow productivity growth under protection, which tends to discourage exports, as production in the confines of domestic markets limits the exploitation of economies of scale, capacity utilization, and technological improvements, thereby aggravating the adverse effects of inefficient resource allocation. By contrast, in national economies where protection levels are low, exports are encouraged, permitting the exploitation of economies of scale and higher-capacity utilization, with the carrot and the stick of competition in foreign markets providing inducements for technological change.

The above considerations may explain the observed positive correlation between exports and economic growth. This was first shown by Michalopoulos and Jay (1973) in a cross-section production-function type relationship, with exports added to the conventional explanatory variables of capital and labor. Subsequently, Feder (1983) found that the use of primary factors in export

production, rather than in producing nonexport products, entailed a 1.8 percentage-point difference in economic growth rates during the 1964–1973 period in a group of thirty-one semi-industrial countries.

These results relate to a period of rapid expansion in the world economy. The question was raised if they would also apply following the deterioration of world market conditions as a result of increases in petroleum prices and the slowdown of economic growth in the developed countries after 1973. This question has been answered in the affirmative in studies by Krueger and Michalopoulos (1985) and by Balassa (1984).

Krueger and Michalopoulos (1985) showed that the average rate of growth of both exports and GNP was higher for outward-oriented developing economies with relatively balanced trade incentives than for inward-oriented developing countries characterized by high protection during the 1960–1973 period of high world economic growth as well as during the 1973–1981 period of external shocks. Balassa further showed that while the external shocks of the latter period entailed a greater economic cost for outward-oriented countries, which had a larger trade share relative to GNP, the excess cost was offset severalfold through more rapid economic growth in these countries than in inward-oriented economies (Balassa, 1984). Differences in growth performance, in turn, were attributed to differences in the adjustment policies applied in response to external shocks.

In subsequent research the trade policies applied at the beginning of this period of external shocks and policy responses to external shocks was introduced simultaneously in a cross-section investigation of forty-three developing countries in the 1973–1979 period (Balassa, 1985). The trade policies applied at the beginning of the period have been represented by an index of trade orientation estimated as deviations of actual from hypothetical values of per capita exports, the latter having been derived in a regression equation that includes per capita incomes, population, and the ratio of mineral exports to the gross national product as explanatory variables. In turn, alternative policy responses to external shocks have been represented by relating the balance-of-payments effects of export promotion, import substitution, and additional net external financing to the balance-of-payment effects of external shocks.

The results show that initial trade orientation as well as the character of policy responses to external shocks importantly affected rates of economic growth in the 1973–1979 period. Thus, GNP growth rates differed by 1.0 percentage point between countries in the upper and in the lower quartiles of the distribution in terms of their trade orientation in 1973. There was further a 1.2 percentage-point difference in GNP growth rates between countries in the upper

and the lower quartiles of the distribution in terms of reliance on export promotion, as against import substitution and additional net external financing, in response to the external shocks of the 1973–1978 period.

The results are cumulative, indicating that both the initial trade orientation and the choice of adjustment policies in response to external shocks importantly contributed to economic growth during the period under review. In fact, these two factors explain a large proportion of intercountry differences in GNP growth rates, which averaged 5.0 percent in the forty-three developing countries under consideration during the 1973–1979 period, with an upper quartile of 6.5 percent and a lower quartile of 3.3 percent.

### **Conclusions and Policy Implications**

The review of protection in developed countries showed that, on the average, trade barriers tend to be higher on agricultural products than on manufactures and within manufacturing tend to be concentrated in a few sectors. By contrast, developing countries protect manufacturing industries more than agriculture, and their barriers are both more widespread and more variable.

Nontariff barriers are more important than tariffs in inhibiting trade between developed and developing countries; nevertheless, because of their escalation, tariffs continue to restrain access to developed-country markets in certain manufactured products. At the same time, with some important exceptions such as high-technology products, the developed-countries' nontariff barriers tend to be more prevalent, and their tariffs tend to be higher, on products of interest to developing countries than on their trade with each other.

It was further shown that the developed countries pay a large cost for maintaining employment in a few manufacturing sectors through protection. At the same time, such calculations underestimate the long-term costs of protection. This is because protection tends to slow down technological progress and leads to the misallocation of new investment.

The analysis of the cost of protection in developing countries focused primarily on the fact that countries with liberal trade regimes tend to grow faster and withstand better adverse developments in the international economy. The reason for their superior performance lies primarily in the lower degree of economic distortions and the greater flexibility associated with their trade regimes, which provide similar incentives to production for domestic and for foreign markets as well as to industry and agriculture.

Despite increasing protection in recent years, the extent of market penetration by developing countries in developed-country mar-

kets has risen, as has overall trade interdependence between the two groups of countries. This increased interdependence, in turn, raises the opportunity for mutually advantageous trade liberalization that can promote structural adjustment and stimulate long-term growth in both developed and developing countries.

Multilateral trade negotiations in the framework of the GATT provide an appropriate—indeed, the only—avenue for significant trade liberalization. Such negotiations would need to encompass all items of importance to trade between developed and developing countries in manufactures, agriculture, and services, and include both tariff and nontariff barriers. All developing countries and (especially) the NICs need to be active participants in such negotiations and be prepared to offer a certain degree of reciprocity consistent with their level of development.<sup>6</sup>

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The authors alone are responsible for the contents of this paper that should not be interpreted to reflect the views of the World Bank.

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<sup>6</sup> A companion paper by the authors, “Liberalizing Trade between Developed and Developing Countries,” examines the objectives, scope, and modalities of multilateral trade liberalization between developed and developing countries.

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