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Preface

The issues arising from industrial protection in developing countries command increasing attention in the Bank. Evaluations of the system of protection have assumed increasing roles in country reports; the establishment of the Industrial Projects Department indicates growing emphasis on industrial lending; and IFC is also intensifying its investigations of the amount of appropriate protection for industrial projects.

The Economics Department began research on problems of industrial protection in 1966 in connection with the Structure of Protection in Developing Countries project. With the completion of this study, the Department initiated a project on Development Strategies in Semi-Industrial Countries. This may be followed by other studies dealing with countries at lower levels of industrial development.

The present paper, written by Bela Balassa, a Consultant to the Economics Department and Director of the Structure of Protection in Developing Countries project, draws on the findings of this project. Its purpose is to explain the basic concepts used in the study of protection; to evaluate the effects of high protection observed in many developing countries during the postwar period; and to provide guidelines for industrial protection in these countries. It is circulated in the Bank for general information as well as for use in country and project analysis. It is not necessarily to be taken as a statement reflecting the views of the Bank Staff.

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1. CONCEPTUAL ISSUES*

Instruments of Protection

1.1 Developing countries use a variety of policy instruments to protect their manufacturing industries. These include price measures such as tariffs, specific taxes, import surcharges, advance deposits for imports, export taxes and subsidies, and multiple exchange rates, as well as non-price measures such as quotas, licensing, and exchange control. In an indirect way, the extent of protection is also affected by other types of policy measures, such as profit taxes and credit policy. In the following, however, we will concentrate our attention on the protective measures proper.

1.2 All price measures can be expressed more-or-less easily in terms of tariffs. Specific taxes or import surcharges are added to tariffs while the tariff equivalent of advance deposits is calculated at the interest rate on loans designed to make such deposits. Export subsidies are treated in the same way as tariffs whereas export taxes (and import subsidies) are regarded as negative tariffs. Finally, in the case of multiple exchange rates, the percentage difference between the exchange rate applied in the particular transaction and the basic rate can be regarded as a tariff (export subsidy) or import subsidy (export tax), depending on whether the former is greater or smaller than the latter.

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* Numbers in square brackets refer to the formulas and examples shown in the Annex.

1.3 While price measures influence resource allocation and foreign trade indirectly by affecting relative prices and the profitability of individual activities, in the case of nonprice measures permissible levels of imports are set directly in quantitative terms. By restricting the amount of imported commodities made available on the home market, these measures lead to a rise in the domestic prices of the commodities in question. The excess of domestic over world market prices can then be regarded as an "implicit tariff" since imports will be the same irrespective of whether domestic prices exceed world market prices by a certain percentage as a result of the application of tariffs or by reason of the imposition of quotas. In the United States, for example, quantitative restrictions have given rise to a domestic price of crude oil some 80 percent higher than the import price. The same result could have been obtained by imposing an 80 percent tariff on petroleum, and the amount of imports would also be the same under the two alternatives [1].

Nominal and Effective Protection

1.4 Estimating the tariff equivalent of price and nonprice measures of protection enables us to rank products according to the percentage excess of domestic over foreign prices which is taken to represent the nominal rate of protection (product protection). From the point of view of the producer, however, not only tariffs and other protective measures on the product matter but also tariffs levied on material inputs, such as industrial materials, fuels, parts, and components used in the production process. These tariffs reduce the extent of protection accorded to a particular firm or industry by raising the cost of material inputs, and can

be regarded as a tax on the processing of such inputs. Thus, in the previous example, U.S. chemical producers are penalized by the high domestic price of petroleum.

1.5 The joint effects on individual industries of tariffs and other protective measures applied to inputs and outputs are indicated by the so-called effective rate of protection. This measure expresses the margin of protection on value added rather than on the product price, and is defined as the percentage excess of domestic value added, obtainable by reason of the imposition of tariffs and other protective measures, over foreign or world market value added [2]. While the effective protection measure is a relatively new concept in economic discussions, it has long been known to businessmen whose main concern is how tariffs on the product and on its inputs affect the protection of their processing activity.

1.6 As an illustration, consider the case of a product (e.g. clothing), the c.i.f. import price of which is $1.00. Converted at the going exchange rate of 100 pesos to the dollar, the price will be 100 pesos, of which the cost of material inputs (textile fabrics) on the world market is equivalent to 60 pesos, and the foreign (world market) value added in clothing manufacturing is 40 pesos. A 20 percent tariff on clothing will raise the domestic price of the product to 120 pesos (i.e. by 20 pesos) while a 10 percent duty on textile fabrics increases material costs to the domestic producer to 66 pesos (i.e. by 6 pesos). Protection will thus enable the firm to operate with a value added of 54 pesos -- the difference between the domestic price of clothing of 120 pesos and the material cost of 66 pesos -- as against a value added of 40 pesos abroad. The margin of 14 pesos means that the effective rate of protection of the domestic processing

activity -- the percentage excess of domestic over world market value added -- will be 35 percent.

1.7 Apart from tariffs on inputs and outputs, the effective rate of protection also depends on the share of value added in the product price. Consider, for example, the case of pharmaceutical products which are imported in bulk into Central America duty-free but bear a 15 percent duty in packaged form. If bulk pharmaceuticals cost 90 percent of the packaged product on the world market -- i.e. foreign value added is 10 percent of the product price -- and the import price is 100 pesos, domestic value added will be 25 pesos (the difference between the domestic price of 115 pesos and the 90 pesos paid for bulk pharmaceuticals). In raising the price of the product by 15 percent, protection thus enables domestic producers to operate with a domestic value added two-and-half times higher than value added in the world market, i.e. the effective rate of protection is 150 percent. Accordingly, relatively low nominal protection may entail high effective protection if value added is a small proportion of the product price. In the examples, the effective rate of protection is greater on pharmaceuticals than on the manufacture of clothing although the latter had higher nominal protection.

Protection and Export Industries

1.8 Consider now the case of an export industry, e.g. meat, which has to sell at world market prices but pays for material inputs, such as fodder, at domestic prices that have been augmented by a tariff. If fodder and other material inputs account for 60 percent of the price of meat and are subject to a 10 percent duty, the effective protection of meat will be

minus 15 percent, i.e. the system of protection applied penalizes meat processing. Taking the world market price of meat to be 100 pesos, the tariff-induced increase in the domestic cost of material inputs from 60 to 66 pesos will entail a decline in value added from 40 to 34 pesos, i.e. domestic beef producers could compete in world markets only if they operated with a value added 15 percent lower than abroad.

1.9 In order to fully compensate for the increase in costs due to tariffs on material inputs, an export subsidy of 6 percent would be needed. This subsidy would raise the price of meat, and domestic value added in meat processing, by 6 pesos which equals the excess cost of material inputs due to tariffs. By comparison, a 10 percent export subsidy would more than offset the increase in material costs, and provide an effective protection of 10 percent (the difference between domestic value added of 44 pesos and world market value added of 40 pesos, as a percentage of the latter) to the industry in question.

1.10 These results indicate that tariffs and export subsidies serve the same purpose: they provide protection to domestic processing activities by raising the value added obtainable by the firm or industry. It is also apparent from the previous example that if the rates of tariffs (subsidies) were the same on the product itself and on its material inputs, they would equal the rate of effective protection of the processing activity. More generally, the effective rate of protection will be higher than, equal to, or lower than the rate of tariff (export subsidy) on the product, depending on whether this tariff exceeds, equals, or falls short of tariffs on material inputs.

"Net" Effective Protection

1.11 Protection permits domestic industries to operate with a value added higher than under free trade, and thus induces the movement of domestic resources (land, labor, and capital) into protected industries. The higher the effective rate of protection, the greater will be this inducement, so that a ranking of protective activities by effective rates of protection will indicate the resource-pull and resource-push effects of protection. Such a ranking focuses attention on the interdependence of economic activities and highlights the fact that the protection of any one industry will have to be at the expense of others.

1.12 We can visualize this interdependence by considering the effects of protection on the exchange rate. The imposition of tariffs (or other protective measures) on imports will permit balance-of-payments equilibrium to be maintained at a lower exchange rate than under free trade. But the lower the exchange rate, the lower will be the price of imports and, correspondingly, the protection provided by a given tariff. The exchange rate that maintains balance-of-payments equilibrium will decline further as the number of protected industries increases, thereby reducing the extent of protection accorded to any one of them.

1.13 As an illustration, let us take again the case of the clothing industry. If the tariff on clothing is 20 percent and no other industries are protected, the domestic price of clothing will be 20 percent higher under protection than under free trade since tariffs on a single product can hardly affect the exchange rate. But if all manufactured goods are protected, the exchange rate will be lower than it would be in a free trade

situation. Assume, for example, that the free trade exchange rate is 110 pesos to the dollar as compared to a rate of 100 pesos in the case of the all-round protection of the manufacturing sector. A world market price of $1.00 will now correspond to a domestic price of 110 pesos under free trade when the higher exchange rate applies as compared to a price of 120 pesos under protection. The overall protection of manufacturing industries has thus raised the domestic price of clothing by 9 percent -- from 110 to 120 pesos -- rather than by 20 percent as a simple observation of the tariff would indicate.

1.14 In adjusting for the difference between the actual and the free trade exchange rate, we can also estimate the net effective protection of the clothing industry. In the event that textile fabrics carry a duty of 10 percent, we will now compare the domestic value added of 54 pesos to a world market value added of 44 pesos, calculated at the free trade exchange rate of 110 pesos to the dollar, rather than to a value added of 40 pesos, calculated at the going exchange rate of 100 pesos to the dollar. Correspondingly, the net (adjusted) effective rate of protection will be 23 percent instead of 35 percent [3].

"Overvaluation" and Resource Shifts

1.15 It appears, then, that the exchange rate observed under protection tends to overvalue the domestic currency as compared to the free trade situation and hence effective rates calculated at this rate will tend to overstate the extent of protection of individual industries. In turn, the degree of discrimination against export activities is understated since exports are penalized by the low (overvalued) exchange rate: producers receive fewer

pesos per dollar than they would get under free trade. In the meat example with a 6 percent subsidy, the domestic equivalent of world market value added will be 44 pesos at the free trade exchange rate (the difference between the product price of 110 pesos and the price of material inputs of 66 pesos under free trade) as compared to the 40 pesos domestic value added (106 less 66 pesos). Thus, while the effective rate of protection calculated at the exchange rate prevailing under protection was nil, the net effective rate will be approximately minus 9 percent.

1.16 More generally, the measures of protection applied and the exchange rate are interdependent, and they can be combined in various ways to ensure balance-of-payments equilibrium. Yet the effective rate of protection is measured at the going exchange rate, and hence depends on the particular combination chosen. To estimate net effective protection (the extent of discrimination against imports or exports) it is therefore necessary to adjust for the overvaluation of the exchange rate as compared to the free trade situation.

1.17 The extent of overvaluation as compared to the free trade situation in turn depends on the ability of the country's industries to expand exports at constant costs and to sell abroad at the going world market prices. The more elastic is the home supply of, and the foreign demand for, exports, the greater is the ease of reallocation and hence the lower the degree of overvaluation [4]. This may be illustrated by taking the extreme case when exports are produced at constant costs, and can be sold at the going world market price. In such an event, the elimination of tariffs and other protective measures would lead to a reallocation of resources from import-

competing to export industries with no change in export prices, and balance-of-payments equilibrium could be maintained without a devaluation. Effective rates of protection calculated at existing exchange rates would then not require an adjustment, since the extent of overvaluation of the exchange rate as compared to the free trade situation is nil.

1.18 In most developing countries, however, the shift of resources from import-competing to export industries would entail increasing costs in producing exports and/or a lowering of their dollar prices in foreign markets. Such a resource shift, then, necessitates raising the exchange rate, i.e. balance-of-payments equilibrium can be maintained only if the elimination of protection is accompanied by a devaluation of the currency. It also follows that comparisons of tariff levels will not appropriately indicate the extent of protection in individual countries and account needs further be taken of the degree of overvaluation of their currencies as compared to the free trade situation.

1.19 It should be emphasized that the expression "overvaluation" has been used here to compare two situations of balance-of-payments equilibrium: one under protection and another under free trade. A further adjustment would have to be made if at the existing exchange rate there was an unintended loss of foreign exchange reserves because in such a situation imported goods as well as exports would be undervalued, thereby providing an incentive to import and a disincentive to export. Similar adjustments would have to be made if there is an expectation that a capital importing country will shortly experience a decline in the inflow of foreign capital.

Domestic vs. Export Markets

1.20 We have considered so far the measurement of protection in particular industries. It is of further interest to analyse the incentives protection provides to firms in a given industry in favor of producing for the domestic market (import substitution) as against exporting. In home markets, the firm can obtain the tariff-inclusive domestic price while -- in the absence of export subsidies -- it gets the world market price on export sales. Yet, unless the firm is reimbursed for tariffs paid on imported materials, it has to pay the same price on material inputs irrespective of whether these are used in domestic production or in exports. In the case of the clothing industry example, protection raises the domestic price to 120 pesos while the export price is 100 pesos. With material inputs costing 66 pesos domestically, value added in import substitution is thus 54 pesos; on the other hand, in order to compete successfully in export markets, the firm would have to operate with a value added of 34 pesos [5].

1.21 Discrimination against exports in particular industries could be reduced if the firm were reimbursed for tariffs levied on imported inputs. But such drawbacks are rarely given if domestic material inputs are used although these, too, increase in price as a result of protection. In the absence of drawbacks, the same incentives could be provided to exports and to import substitution if export subsidies were applied at the same rate as tariffs, since the domestic producer would now get the same price whether he exports or produces for the protected home market.

Summary

1.22 In Section I of this paper, we have presented some concepts that are useful in discussions on protection in developing countries. We have first compared the nominal rate of protection (product protection) and the effective rate of protection (protection of value added). The former is defined as the tariff equivalent of the protective measures applied and it equals the percentage excess of domestic over foreign prices due to the imposition of such measures. Apart from tariffs (and other protective measures) on the product itself, the effective rate of protection is also affected by tariffs on material inputs and by the share of value added in the product price. It is defined as the percentage excess of domestic value added, obtainable under protection, over foreign or world market value added.

1.23 Rates of nominal and effective protection are calculated at the existing exchange rate and need to be adjusted for the difference between this rate and the exchange rate that would obtain in a free trade situation. Such an adjustment is necessary since the imposition of protective measures permits balance-of-payments equilibrium to be maintained at an exchange rate lower than the rate that would prevail under free trade. The lower exchange rate, in turn, reduces the price of imports and thus lessens the protection provided by a given tariff. Further adjustments are required if the existing exchange rate did not ensure equilibrium in the balance of payments during the period under consideration.

1.24 Net effective rates of protection (i.e. effective rates adjusted for overvaluation as compared to the free trade situation) indicate the extent of discrimination against imports or exports while the ranking of domestic industries by effective rates shows the resource-pull and resource-push effects of protection. In protected industries, we can further analyze the incentives provided in favor of import substitution and against exporting. Bias against exporting arises because firms can obtain the tariff-inclusive price in home markets whereas -- in the absence of export subsidies -- they get only the world market price on export sales.

2. EFFECTS OF PROTECTION IN DEVELOPING COUNTRIES

Protection and Industrialization

2.1 Throughout the postwar period, developing countries have employed a variety of instruments to protect their manufacturing industries. While protective measures had often been applied initially to remedy balance-of-payments deficits, industrialization soon emerged as the major reason for protection. Still, short-term balance-of-payments considerations periodically come to the fore as deficits threaten with a loss of foreign exchange reserves.

2.2 The basic argument for industrialization has been that, because of poor demand prospects, traditional primary exports cannot assure a rapid rate of economic growth in the developing countries; hence, reliance needs to be placed on import substitution in manufacturing industries, both to provide a stimulus to growth and to ensure equilibrium in the balance of payments. Additional considerations have been the allegedly higher rate of increase of productivity in manufacturing as compared to primary production and the employment-creating, as well as the "training" effects of industrial activities. Industrialization has also been regarded as a symbol of development, and in some instances it has become an end in itself.

2.3 It has further been claimed that developing countries have certain disadvantages in manufacturing industries vis-à-vis the developed nations, which necessitate the protection of their domestic industries and reduce their chances for exporting manufactured goods. Such disadvantages

include deficiencies in social and economic overhead capital, absence of managerial and organizational skills, and lack of experience in manufacturing operations. For any particular industry, the absence of cooperating industries is said to provide a further disadvantage.

2.4 Whatever the motivation, in the postwar period many developing countries have expanded their manufacturing industries behind high protective barriers by substituting domestic production for imports. The system of protection itself has emerged as a historical result of actions taken at different times and on a piecemeal basis. These actions have responded to the particular circumstances of the situation, and have been frequently conditioned by the demands of special interest groups. The authorities have often taken a permissive attitude toward requests for protection on the part of firms -- public or private -- without inquiring into the impact of the measures applied on other industries and on the allocation of resources in the national economy as a whole.

2.5 Developing countries often defend the high protection of their manufacturing industries by reference to the policies present-day developed nations followed at the time of their industrialization. Yet, apart from the United States and Russia, tariffs were relatively low in the countries in question, and import substitution went hand-in-hand with the expansion of the exports of manufactured goods. It would appear that medium-size and small countries wished to obtain the benefits of the international division of labor whereas the two large countries could better afford to orient industry toward domestic markets.

2.6 In the post-war period, Norway and Denmark have been successful in transforming their export structure from reliance on raw materials and

simple processed goods to manufactured products in the framework of an open economy with low protection. Some developing countries, such as Hong Kong, China (Taiwan), and Korea, have also embarked on an export-based expansion of manufacturing industry but these are exceptional cases in the developing world. In the following we will concentrate our attention on the more prevalent case of industrialization through import substitution in the protected market.

The Structure of Protection in Developing Countries

2.7 Several Asian countries apply quantitative restrictions to imports while in much of Latin America such restrictions have given place to tariffs and other price measures. But, irrespective of the measures applied, in most industrializing countries tariffs and the tariff equivalent of quantitative restrictions on manufactured goods are in the 100-200 percent range. Effective rates of protection are even higher due to the "escalation" of the tariff structure, with tariffs rising from lower to higher levels of fabrication.

2.8 The system of protection applied in these countries involves a considerable degree of discrimination in favor of manufacturing and against primary activities, thereby contributing to the shift of resources from the former to the latter. High levels of protection, together with the bias in favor of import substitution and against exports, also tend to encourage the parallel development of a wide range of manufacturing industries. Finally, the application of protective measures affects the pattern of specialization within industries. The virtual exclusion of imports and the bias against exports give incentives to domestic firms to produce many varieties

of a given product while in open economies firms generally manufacture fewer products and sell them in home markets as well as abroad.

2.9 Apart from discouraging the development of manufactured exports, high levels of protection of domestic manufacturing penalizes traditional primary exports. Such exports suffer discrimination due to the high prices of their industrial inputs, the overvaluation of the exchange rate and, in some instances, export taxes. Apart from export taxes, these influences unfavorably affect the development of new primary exports, too.

2.10 We will consider here the so-called "static" and the "dynamic" costs of protection, with attention given to economies of scale and the relationship between protection and technological change. We will further examine the effects of protection on traditional and nontraditional exports and on the share of imports in national income. Finally, the impact of protection on the rate of economic growth will be discussed.

The "Static" Cost of Protection

2.11 High effective rates of protection of manufacturing industries indicate that value added in these activities exceed world market value added by a considerable margin. This excess, in turn, may be absorbed by above-average profits or by high manufacturing costs. The former involves a redistribution of incomes from the consumer to the producer while the latter represents an economic cost that reduces the national income obtainable from available resources. It is often called the present or "static" cost of protection.

2.12 An example can serve to illuminate the possible magnitude of the static cost of protection. Take the case of a small country which

can buy and sell on the world market at the going price and it can expand export industries at constant costs. If there are no excess profits effective rates of protection of, say, 100 percent on import-competing goods and nil on exports would mean that domestic processing costs are double world market costs in the first case and equal to world market costs in the second. Protection thus permits the profitable operation of import-competing industries which require twice as many domestic resources per dollar saved through import substitution than the amount of resources needed for earning a dollar through exports. Correspondingly, eliminating protection would lead to the transfer of domestic resources from import-competing to export industries where their contribution to foreign exchange earnings and national incomes is twice as high.

2.13 Few countries are able to expand export sales at constant prices so that the improvement in their terms of trade following the imposition of tariffs in part compensates for the excess cost of domestic production. Nevertheless, in developing countries with high protective barriers, this cost may be of a considerable magnitude. In this connection one should add that, apart from the high average protection of import-competing industries, a further cost is involved in the wide variation of effective rates among these industries that encourages the misdirection of resources towards industries with the highest effective rates of protection.

2.14 There are even cases when protection, and its cost to the national economy, is so high that value added in world market prices becomes negative. An oft-cited instance is when a country imports parts and components for domestic assembly at a foreign exchange cost greater than that of the assembled product. The system of protection may also

make it profitable for the firm to use materials whose world market value exceeds that for the product itself.

The "Dynamic" Cost of Protection

2.15 But should the described "static" cost of protection be accepted for the sake of future, "dynamic", benefits that are obtained as the industry becomes internationally competitive? The infant industry argument of international trade theory gives an answer to this question by suggesting that an industry be protected if the costs of protection are recouped after the industry has "grown up". This argument -- to be discussed in some detail in Part 3 below -- puts emphasis on the temporary nature of protection, needed to shelter a fledgling industry, that will be removed as maturity is reached.

2.16 In most developing countries following a policy of import substitution, however, there are no expectations for the removal of protection, and governments as well as firms act on the assumption that protection will be maintained ad infinitum. At the same time, levels of protection are generally much higher than could be considered acceptable on infant industry grounds. Such policies, then, bear only a superficial resemblance to the infant industry argument that envisages lower and temporary protection. The long-term implications of the policies of continuing import substitution, too, are different. Rather than catching up with the industrial nations, the continued sheltering of domestic industry from foreign competition behind high protective barriers tends to impose a "dynamic" cost on the national economy in the form of opportunities foregone for improvements in productivity.

2.17 Various factors hinder increases in productivity in countries that follow a policy of import substitution behind high protective barriers. For one thing, the small size of domestic markets provides limitations to the application of large-scale production methods. For another, technical change is hindered by reason of the fact that the countries in question are characterized by sellers' markets; producers have a dominant position and users have practically no choice between domestic and foreign products nor often among domestic products.

2.18 The scale requirements of production represent less of an obstacle in countries of larger size, hence they can proceed further with import substitution than smaller nations. Nevertheless, the limitations of domestic markets are apparent even in large developing countries, and the absence of foreign competition also hinders improvements in production methods. Our conclusions thus apply to Brazil and India, too, although these countries have more leeway in expanding manufacturing industries that produce only for domestic markets than e.g. Chile or Iran.

Economies of Scale

2.19 As high levels of protection generally lead to the parallel expansion of a wide range of industries catering exclusively to domestic markets, limitations of market size do not permit the use of large-scale production methods in a variety of industries. By contrast, countries with low levels of protection tend to specialize in conformity with comparative advantage, and firms producing for domestic markets as well as for exports benefit from economies of scale. Economies of scale can be obtained through the construction of larger plants that produce a single

product (economies of scale in the traditional sense), through reducing product variety in individual plants (horizontal specialization), and through the manufacturing of various parts, components and accessories of a given product or products in separate establishments (vertical specialization).

2.20 Economies of scale in single product firms depend on the character of the product and the degree of sophistication in production techniques. The efficient scale of operations is relatively low and costs of production on a smaller scale are only moderately higher, in some nondurable consumer goods industries which employ rather simple production techniques. However, the efficient scale of output is large, and costs increase substantially at lower output levels, in the production of most intermediate products, capital goods and durable consumer goods which necessitate the use of sophisticated production techniques.

2.21 Thus while in textiles and shoe manufacturing costs per unit may decline only 10 percent as output doubles, in most other major industries substantially larger cost differences are observed. For example, steel production costs are one-third higher in a plant producing 250 thousand tons a year than in a plant with an annual output of one million tons; a doubling of fertilizer output involves a decrease in unit costs by nearly one-half; and in pulp and paper production unit costs are about two-thirds higher in a mill with a daily output of 50 tons than in one with 200 tons. Yet, in developing countries one hardly finds plants of efficient size in these industries.

2.22 Comparisons of unit costs in domestic and foreign plants of American firms, reported in a National Industrial Conference Board study, Costs and Competition in American Experience Abroad, covering a wide range of industries, also provide evidence of scale economies. According to this study, costs in foreign operations are on the average 29 percent higher than in the United States whenever the foreign plant's output is less than 5 percent of that of the U.S. plant; the percentage ratio of foreign to domestic costs falls to 106 in the case of output ratios of 5 to 10 percent, it is 98 in the case of output ratios of 10 to 50 percent, and 85 if the foreign plant produces more than one-half of the U.S. factory's output.

2.23 Horizontal specialization through reducing product variety in multi-product plants also results in scale economies. In countries where protection levels are low, plants can specialize in a narrower range of commodities for domestic production and for exports, and hence have longer production runs. The lengthening of production runs, in turn, permits improvements in manufacturing efficiency through "learning by doing"; reduces the expenses associated with resetting machines and reorganizing work; and allows for the use of specialized machinery. Textiles, machine tools and shipbuilding are frequently mentioned examples.

2.24 In countries with high levels of protection and bias against exporting, however, horizontal specialization is obstructed by the incentive system. Production serves only domestic outlets and, in the absence of imports, firms manufacture many varieties of a particular product in conformity with the pattern of domestic demand. Thus, in

countries such as Argentina, Brazil, and Chile the proportion of imports in the domestic sales of nondurable consumer goods is practically nil and exports, too, are negligible.

2.25 In durable consumer goods, machinery, and transport equipment industries, further gains can be derived from vertical specialization through the separation in individual plants of various activities leading to the production of a given commodity. Even in cases when the final product may be produced on an efficient scale in a developing country, this will hardly be possible in the manufacturing of parts, components and accessories, so that the "backward integration" of production involves considerable costs. However, the system of incentives applied in countries following policies of import substitution encourages the home production of parts and components for domestic use while discouraging their exportation. In turn, open economies participate in the international division of the production process by manufacturing parts, components, and accessories for assembly abroad and also import them for domestic assembly.

2.26 The Brazilian automobile industry provides an example of the cost-raising effects of "backward integration". It has been shown that the excess cost of domestic car production in Brazil rises from 6 to 71 percent as we move from assembly to 99 percent domestic content of the automobile. Yet Brazil has required automobile manufacturers to raise the domestic content of an automobile to 99 percent. Legal requirements on the minimum proportion of nationally fabricated components have also been progressively increased in Chile: from 27 percent in 1964 to 32 percent in 1965 and again to 45 percent in 1966. By contrast, a country

such as Norway has no automobile industry although it has five times as many passenger cars as Chile; rather, it manufactures parts, components, and accessories of automobiles for assembly abroad.

Protection and Technological Change

2.27 The effects of protection on competition and technical change should further be noted. In countries with high levels of protection, the smallness of domestic markets has led to the establishment of monopoly positions in some industries and there is rarely effective competition in others because the high profits assured by continuing protection are conducive to a "live and let live" attitude in industry. High profits, then, absorb part of the excess of domestic over world market value added that is shown by the rate of effective protection. As noted earlier, these profits represent a redistribution of income from domestic consumers to producers in the case of domestic firms. But, if the firms in question are foreign-owned, protection will involve an additional cost to the national economy since profits are now transferred abroad. Foreign investment in highly protected industries, then, may conceivably bring a loss rather than a gain to a developing country.

2.28 High profits assured by protection will tend to have further adverse effects, irrespective of whether firms are domestically or foreign-owned. These effects are related to the motivation of the firm in the "hothouse" atmosphere of sheltered domestic markets. In such a situation, firms tend to follow a policy of low turnover and high profit rates and have little incentive for product improvement and technical change. In fact, in highly protected industries, product quality has often deteriorated and firms have been reluctant to assume the risk associated with

the introduction of new products, production methods, and innovating activity in general. At the same time, the lack of competition limits the expansion of domestic markets by maintaining prices at high levels.

2.29 The continued high protection of domestic industry has thus often involved a "dynamic" cost in the form of opportunities foregone for improvements in productivity. Countries where import substitution extends to intermediate goods, machinery and transport equipment have built up an industrial structure which entails the use of small-scale and backward production methods, inadequate specialization, and the manufacturing of products of low quality. As a result, in a variety of industries the distance in terms of productivity levels between industrial and developing countries has often increased rather than decreased.

2.30 Brazil and Chile provide examples of the effects of continuing protection in long-established industries. In both countries, industries producing nondurable consumer goods and the intermediate products used in their manufacturing were well established by the end of the Second World War. Nevertheless, the industries in question generally receive higher protection than the newly-developed machinery and intermediate products industries. With continuing protection assured to them, high costs observed in many of the firms in these industries are then often the result rather than the cause of protection.

Effects of Protection on Foreign Trade

2.31 A policy of import substitution behind high protective barriers also tends to adversely affect a country's export performance. As noted in Paras 2.8 and 2.9, discrimination against the primary sector penalizes traditional exports and discourages the development of new primary exports through high prices of manufactured inputs and the overvaluation of the exchange rate. Furthermore, in the protected manufacturing industries, production for domestic use is favored over exports.

2.32 The consequences of the unfavorable treatment of traditional exports are seen in the decline of world market shares in developing countries characterized by high levels of protection. In fact, poor export performance is often due not so much to the slow growth of demand as to the insufficiency of supply. The policies applied have contributed to the decline in Argentina's share in world markets for example. Between 1934-38 and 1963-66, major Argentine exports rose, on the average, by only two percent while the world exports of the same commodities more than doubled. Nor have countries with high levels of protection been successful in developing new primary exports.

2.33 The cost-raising effects of the protection of inputs, the overvaluation of the currency, and the favorable treatment provided to production for the home market have also hindered the expansion of the exports of manufactured goods. In most countries engaged in import substitution, industrial exports have risen little during the postwar period and the share of exports in manufacturing output has remained constant or even declined. In the mid-sixties, manufactured goods rarely provided

more than 5 percent of the total exports in these countries and accounted for only 1-2 percent of their manufacturing output.

2.34 Exceptions are Israel, China (Taiwan), and Korea that have encouraged rather than discouraged manufactured exports. As a result, the manufactured exports of these countries rose at an annual rate exceeding 20 percent a year over the last decade, and by the mid-sixties they exported a substantial portion of their manufacturing output. In the absence of substantial discrimination against primary activities, the traditional exports of these countries, too, expanded at a rapid rate, so that increases in their total exports exceeded 15 percent a year. By contrast, the average rate of increase of exports for all developing countries, taken together, was approximately 5 percent.

Protection and Economic Growth

2.35 Trade policies influence economic growth through their impact on exports and import substitution as well as by affecting the cost of domestic production. Increases in exports and the replacement of imports will contribute to growth directly by raising national income and indirectly by providing foreign exchange for the import needs of the domestic economy. At the same time, import substitution at high costs will reduce the contribution of domestic resources to national income. The relative importance of these influences varies at different stages of economic development.

2.36 A number of developing countries attained rapid rates of growth of manufacturing output and, to a lesser extent, national income, in the early stages of import substitution which entails replacing imports of nondurable consumer goods by domestic production. Nondurable consumer

goods and their inputs are the prime candidates for import substitution since they employ chiefly unskilled and skilled labor, do not require the application of sophisticated technology, and need few inputs from ancillary industries. At the same time, the efficient scale of operations, and thus the cost of protection necessary for inducing domestic manufacturing, is potentially low.

2.37 The expansion of output in these industries necessarily slows down after all imports have been replaced since domestic production cannot continue to grow faster than home demand. At the same time, increasing difficulties are encountered in import substitution in regard to other intermediate products, capital goods, and durable consumer goods that have higher technological and skill requirements, need large-scale production for efficient operations, and require the availability of materials, parts, and components from other industries.

2.38 The rising cost of import substitution, in turn, necessitates increased efforts for obtaining an additional increment in output, so that a deceleration in the rate of economic growth will take place unless there is a compensating rise in the share of investments in national income. In fact, despite increases in the rate of investment, countries such as Argentina and Chile experienced a decline in the rate of growth of GNP once the early stage of import substitution had come to an end.

2.39 Adverse changes in the balance of payments at higher stages of import substitution, too, impose a limitation on the rate of economic growth. Increased discrimination against primary activities tends to lead to a deterioration of export performance and often necessitates larger imports of foods and raw materials. At the same time, durable

goods and intermediate products industries have substantial import requirements in the form of materials, parts, components, and accessories, as well as machinery. As a combined result of these influences, after a decline in the share of imports in the early stage of import substitution, reliance on imports has often risen again.

2.40 The increasing difficulties experienced by countries at higher stages of import substitution have recently led some governments to reconsider their economic policies. In Argentina, for example, the extent of discrimination against primary production and against exports has been reduced and the protection of manufacturing industries has been moderated through a simultaneous devaluation and a lowering of tariffs. In Chile, an effort has been made to lessen the degree of overvaluation of the currency while subsidies are used to promote the exports of manufactured goods.

2.41 Efforts made to reform the structure of protection, however, have gone only part of the way and further progress is made difficult by powerful resistance on the part of vested interests. Businessmen are opposed to changes in the status quo which ensures comfortable profits, and demand continuing protection from foreign competition, whether this comes from industrial countries or from developing nations as the case of LAFTA. A further problem is that transition to a more open economy would entail dislocation in particular industries and regions.

2.42 These considerations indicate the importance of making appropriate policy choices at an early stage of industrialization because once an industrial structure geared to import substitution has been established, change becomes increasingly difficult. By contract, export-orientation

can permit continuing growth. In fact, countries following such policies have attained growth rates of GNP of 8-10 percent over the last decade while the average for all developing countries has hardly exceeded 4 percent.

Summary

2.43 In the second part of this paper, we have considered the effects of policies of industrial protection on resource allocation and economic growth. We have noted that high protection in developing countries has often contributed to a slowdown in the production and exports of primary commodities and has not been conducive to the expansion of the exports of manufactured goods. And while import substitution in nondurable consumer goods and their inputs permitted rapid economic growth at an early stage of import substitution, developing countries encounter considerable difficulties in embarking on the production of more sophisticated commodities. The disadvantages of small domestic markets, along with the lack of sufficient incentives for technological improvements under protection, involve a considerable cost to the national economy and tend to slow down advances in productivity and the rate of economic growth.

2.44 By contrast, outward-looking policies involve less discrimination against primary production and do not entail a bias against exports in manufacturing industries. Countries following such policies have attained a rapid growth of exports by maintaining or increasing their shares in world markets for their traditional exports and by raising the share of exports in manufacturing output. Success in exporting, in turn, has led to a high rate of growth of national income.

3. GUIDELINES FOR INDUSTRIAL PROTECTION POLICY

Protection and Industrial Policy

3.1 The purpose of the third part of this paper is to provide guidelines for industrial protection policy in developing countries. As in the previous parts of the paper, we will concentrate on the application of protective measures in these countries. Thus, while noting the desirability of using direct measures in lieu of protection in certain situations, we will exclude from our purview such instruments of industrial policy as taxes, credit, minimum wages, public corporations, and incentives to foreign investment. This omission can be rationalized on the grounds that protective measures play a central role in the industrial policy of developing countries. Nevertheless, other policy instruments often modify the effects of protection, and hence their study is of considerable importance. The joint effects of protection and other policy instruments on industrialization will be examined in the framework of the Bank's research project on "Development Strategies in Semi-Industrial Countries".

3.2 It should be emphasized at the outset that policy recommendations made in individual cases would have to depend greatly on the particular circumstances of the situation. In proffering policy advice, one has to take account of such characteristics of individual countries as the size of domestic markets, geographical location, preferential access to foreign markets, natural resource endowment, prospects for traditional exports, and the availability of human and physical capital. Consideration needs also be given to political and social conditions in the country in question, and

to the interactions of political, social and economic factors. Finally, for countries which have already established some industries, the existing industrial structure limits the available policy choices.

3.3 A program for industrialization is conditioned first of all by the size of the country's domestic market. Thus, the large home market in Brazil or India creates opportunities for the establishment of efficient size firms in a number of industries while there are few such possibilities in most African countries or in the smaller Latin American republics. However, as the example of Tunisia indicates, a small country may recognize the disadvantages of import substitution sooner than a medium-size nation, and accordingly embark on an export-oriented industrial development program. More generally, developing countries form a continuum with respect to the size of domestic markets, so that there is need for a spectrum of policies applicable to countries of different size with varying emphasis on import substitution and exports.

3.4 Geographical location affects the possibilities for exporting manufactures as well as the chances for regional integration. Nearby markets provide an advantage to the countries of Southern Europe, although Japan and, more recently, Korea, and China (Taiwan) have shown that geographical distance is not an obstacle to expanding the exports of manufactured goods. In turn, regional integration can be regarded as a way of increasing the size of the domestic market, and in this respect Colombia is better situated than e.g. Korea.

3.5 Preferential access to foreign markets is a related consideration. Policy advice to Portugal, for instance, would have to be based on the availability of a large market in EFTA where Portuguese exports are not subject to duty. In general, the desirability of alternative policies will depend on the extent of the preferences and the probability of their continuation. Policy advice would also have to concern itself with the optimal exploitation of the advantages offered by preferential arrangements and the possible scope of obtaining preferential access to the markets of developed nations.

3.6 A favorable natural resource endowment and good prospects for traditional exports may make the process of industrialization less painful by lessening the need for stringent measures to limit the imports of manufactured goods. But rapidly rising foreign exchange earnings can also lead to wasteful spending on prestige projects. On the other hand, as the example of Hong Kong and Singapore indicates, the lack of natural resources may mean that a country will by necessity avoid costly mistakes in import substitution. Finally, a high educational level of the labor force may create the preconditions for rapid industrialization, as in the case of Korea and China (Taiwan).

Evaluating the Structure of Protection

3.7 Notwithstanding the importance of the particular circumstances which have to be taken into account in individual cases, one may provide general guidelines for industrial protection policy in the developing countries. But such guidelines cannot be confined to the manufacturing sector since the policies followed in this sector necessarily affect the

other sectors of the national economy and its growth performance. In other words, industrial protection policy has to be regarded as part and parcel of an overall development strategy.

3.8 The first prerequisite of policy formulation is the knowledge of the existing situation: the structure of protection and its effects on resource allocation and economic growth. Such studies have been undertaken for Brazil, Chile, Mexico, Malaysia, Pakistan, and the Philippines in the framework of the Bank's "Structure of Protection in Developing Countries" research project which provides estimates on the effective rates of protection in these countries. In several countries, including Argentina, Colombia, Venezuela, Korea, and China (Taiwan), the governments themselves have initiated research on the structure of protection. Further work may be usefully undertaken in other countries and the Bank can play a role both by prodding governments to carry out such studies and by examining, in its economic reports, the structure of protection of individual countries.

3.9 The measurement of effective protection, however, is far from easy and the possibilities of error are considerable. This is particularly so in cases where the application of quantitative restrictions makes it necessary to estimate "implicit tariffs" by comparing domestic and world market prices. Further difficulties arise in the presence of redundant protection that is associated with prohibitive tariffs on imports. In such instances, domestic prices are lower than the sum of the c.i.f. import price and the tariff and there is again need for making direct price comparisons. Problems are also due to the fact that tariff and price observations relate to individual commodities while data on material inputs and value added are usually available only on an industry basis. Last but

not least, the estimation of the degree of overvaluation as compared to the free trade situation is subject to error due to uncertainties concerning the magnitude of the relevant elasticities.

3.10 These considerations point to some of the difficulties involved in estimating effective rates of protection. In the Bank's economic work it will often be necessary therefore to concentrate on nominal rates of protection, making only rough approximations to indicate the structure of effective rates. But, especially in the analysis of industrial projects, there is need for examining the interrelationships of tariffs, quotas, and exchange rates.

Tariffs vs. Quantitative Restrictions

3.11 In advising on industrial protection policies, the choice between price and nonprice measures of protection needs first be considered. Absolute prohibitions to import, import quotas, and licensing have all been used in a number of developing countries. Such quantitative restrictions were first applied mostly in time of a balance-ofpayments crisis but have often been continued thereafter. Also, they may have been originally imposed only on a few commodities but were later extended to cover most or all of imports.

3.12 It has been suggested that quantitative restrictions permit rapid action on the part of the government and provide an easy way of translating economic priorities into concrete decisions. But while the possibility of rapid action commends itself in the case of sudden changes in the balance-of-payments situation, it has little relevance for long-term policy making. Moreover, although it may appear promising to link import policy directly to planning, in practice the limitations of planning procedures

together with the administrative problems of applying quantitative restrictions create considerable difficulties in the decision making process.

3.13 The administration of a system of import licensing imposes a burden on the administrative apparatus of the government and contributes to the growth of bureaucracy. It also introduces arbitrariness in decision making since one can hardly devise general rules applicable to each case. At the same time, the system of case-by-case decisions, in which responsibility ultimately rests with petty bureaucrats, necessarily creates inequities as well as uncertainty for the would-be quota recipients.

3.14 Firms -- both public and private -- thus have to make decisions under uncertainty as regards quota allocations, while applications for licenses to import equipment, spare parts, and materials generally require a considerable effort on their part. Such an effort is profitable from the point of view of the individual firm but it involves a cost for the national economy. And since licenses have a scarcity value, their recipients will get the difference between the domestic price of the product and its import price which would accrue to the government if tariffs were applied.

3.15 The profit obtainable from licenses not only induces a diversion of productive effort but also provides incentives for bribery which may be looked upon as a "sharing" in this profit. Accordingly, vested interests are created to perpetuate the system of quantitative restrictions. Vested interests militate against changes in this system since quota recipients try to avoid sharing the spoils with new entrants, thereby creating a conservative bias. Finally, the application of quantitative restrictions

makes the policy maker's task of evaluating the effects of these restrictions on the national economy more difficult. In the absence of detailed price comparisons, it is impossible to appraise the protective effects of the quotas and, ultimately, planning may suffer because appropriate criteria for evaluating alternatives are lacking.

3.16 By contrast, the effects of tariffs on domestic prices can be relatively easily ascertained; also, tariffs permit replacing case-by-case decision making by automatic rules, reduce uncertainty for the producer and the user, and contribute to government revenue. These considerations explain why several Latin American countries have shifted from quantitative restrictions to tariffs; such changes are also under way in socialist countries such as Czechoslovakia and Hungary. It would also appear desirable if other developing countries using quantitative restrictions would increasingly replace them by tariffs.

Traditional vs. Nontraditional Primary Products

3.17 Before turning to the question of relative incentives to manufacturing and primary activities we should consider the need for differential incentives within the primary sector. Such a need arises because of differences in the potential contribution of various primary products to the growth of the national economy. Accordingly, one should provide differential incentives to traditional exports where an overly rapid expansion of supply would engender a fall in prices obtained abroad and to primary commodities where the country in question can expand production and exports without encountering market limitations.

3.18 Differential incentives to the two groups of primary products could be provided by applying the basic exchange rate to nontraditional primary products while converting earnings from traditional exports at a less favorable exchange rate or -- what amounts to the same -- imposing an export tax on them. Export tax rates on individual commodities should be ideally set so as to maximize foreign exchange earnings from the sale of such products, allowing for the elasticity of world demand for the individual commodities, the country's share in would exports, and the possible reactions on the part of foreign competitors.

3.19 An extreme case is that of coffee where producing countries would be advised to set the export tax (differential exchange rate) at a level calculated to ensure that domestic supply be equal to quota allocations under the International Coffee Agreement. In this way, profits due to the price-raising effects of quotas in international markets accrue to the government and, rather than providing incentives to surplus production, the proceeds of an export tax can be transferred to other activities where higher returns are obtained. For other commodities, however, the determination of the optimum export tax is subject to uncertainty due to the lack of exact information on foreign demand and supply response.

3.20 The suggested policy measures would take account of market limitations for traditional exports, without discouraging either their production for domestic use or the development of new primary exports. The question remains, however, whether manufacturing industries should be favored over nontraditional primary production, and if so, to what extent, and by the use

of what measures. A further question is whether the incentives provided should be uniform within the manufacturing sector or should vary from one industry to another.

The Infant Industry Argument

3.21 All economic arguments for the preferential treatment of manufacturing find their origin in assumed differences between social and private benefits or between private and social costs. In the first case, it is assumed that there are some benefits to the national economy that the firm does not capture in its profit calculations; in the second, the firm's production cost is said to exceed the cost to society. Needless to say, such differences may arise in primary activities as well, so that we face the question if they are more important in manufacturing than in primary production.

3.22 In Para 2.15, mention has been made of the infant industry argument. This argument can be reinterpreted that industries should receive preferential treatment if otherwise industrial firms would invest less than socially necessary. This will be the case if the lack of credit facilities, the overestimation of the risks involved, or simply the desire to exclude the possibility of bankruptcy provide disincentives for investment, although eventual cost reductions through the learning process or through increases in the scale of operations would make the firm internationally competitive. Other instances are when the benefits of the firm's activities may in part be enjoyed by others who would utilize the know-how generated by the firm or hire away skilled labor and technicians it has trained.

3.23 The infant industry argument provides a rationale for the application of special incentives to manufacturing on a temporary basis. But, as the industry reaches maturity, the need for preferential treatment disappears. At the same time, to ensure that the industry will indeed "grow up", it appears desirable to provide incentives on a declining scale set in advance so that producers can plan in full knowledge of future changes in these incentives.

3.24 It has often been said that the infant industry argument provides justification for the use of production subsidies rather than tariffs since the latter limits the size of the domestic market by raising the price of the commodity. But while tariffs contribute to governmental revenue, production subsidies represent a claim on this revenue. Budgetary reasons, then, may explain that developing countries use tariffs in preference to production subsidies. In fact, tariffs often account for a large part of government revenue in these countries, and their replacement by other forms of taxation often encounters practical difficulties.

Employment Considerations and Provision for Overhead Facilities

3.25 The economic argument against the use of tariffs gain in force, however, in cases when a particular distortion or cost desirability needs to be corrected. This will be the case if the cost of industrial labor to manufacturing enterprises exceeds its social cost in the form of output foregone in primary activities from where labor is drawn. In some overpopulated countries, such a situation may exist on family-type farms where the contribution of the marginal worker is said to be less than his

consumption. There is further the possibility that unemployment will persist at the existing wage rate and the wage cannot be reduced lest it decline below a socially acceptable minimum. The production of minerals, for example, utilizes relatively little labor and countries may not be able to employ their labor force fully without providing special incentives for labor use.

3.26 In the cases described, the appropriate measure would be subsidizing the use of labor rather than imposing tariffs. Subsidizing labor use could take the form of taxing output and rebating the tax on the basis of the number of employees. This method would encourage the expansion of labor-intensive industries that use a developing country's abundant resource, labor, and would also provide incentives for employing labor-intensive production methods. It should be emphasized, however, that if labor use is subsidized for the sake of reaching full employment, there is a trade-off between employment and growth since resources will be channeled into industries with relatively high costs. And should the method be applied, there is no reason to restrict its application to manufacturing industries but it should be extended to all sectors other than family farming.

3.27 Particular cost disabilities or handicaps of manufacturing industry in developing countries in the form of inadequate overhead facilities can also best be corrected by specific action rather than by protection. These cost disabilities are due to the fact that private profitability considerations may not induce the establishment of service installations subject to large-scale economies. The appropriate measures would then take the form of

building roads and ports, and making available electricity and water at a reasonable cost. The provision of such facilities cannot be restricted to manufacturing, however. Roads and electricity are needed for agricultural activities, just as an increase in the educational level of the labor force would contribute to the development of industry as well as to the modernization of agriculture.

Further Arguments for Preferential Treatment of Manufacturing

3.28 The question remains if, apart from temporary protection on infant industry grounds, manufacturing should receive preferential treatment. In support of this proposition, it has been argued that productivity tends to rise more rapidly in manufacturing than in primary production and that the expansion of manufacturing industries provides indirect benefits by inducing investments in other branches of industry and improving the quality of the labor force. The first claim holds true if we compare manufacturing with agricultural activities that employ traditional techniques, but modern advances in agriculture offer possibilities for improvements in productivity. And while linkages among industries often favor the establishment of related branches of manufacturing, one should not condone on this basis the establishment of inefficient industries which supply inputs to other industries at a high cost. Finally, there is some merit to the argument that manufacturing contributes to improvements in the quality of the labor force to a greater extent than even modern agriculture.

3.29 From the point of view of long-term policy making, consideration should further be given to possible future changes in supply and demand for primary products. In some developing countries, either the supply of prima-

ry commodities or export demand for them would eventually prove to be a limiting factor for the country's economic growth. In such a situation, the preferential treatment of manufacturing industry, where supply and demand limitations are negligible, would be warranted not only vis-a-vis traditional primary commodities but also in comparison to the primary sector as a whole.

3.30 These considerations indicate the difficulties encountered in appraising the claims made for the superiority of manufacturing over primary production; the difficulties are compounded if we attempt to quantify these alleged advantages. Nevertheless, one may argue that manufacturing offers some advantages over primary production in the form of labor training and in encouraging the expansion of other industries which do not enter into the profit calculations of the firm but benefit the national economy. Moreover, manufacturing will improve the growth potential of the economy whenever supply or demand limitations exist in primary activities.

Import Substitution and Exports of Manufactured Goods

3.31 There is some presumption, then, in favor of using direct and indirect measures to promote manufacturing industry in developing countries. The word "promote" is used advisedly as it includes the protection of production for domestic markets (import substitution) as well as assistance to firms exporting manufactured goods. This point needs emphasis since in most developing countries protection is provided for import substitution in the form of tariffs or quotas while exports rarely receive subsidies.

3.32 Yet exports of manufactured goods can play an important role in industrial development by increasing foreign exchange earnings and enabling firms to use large-scale production methods. Instead of production on a small scale exclusively for domestic markets, exports make it possible to specialize according to comparative advantage, to reduce product variety in individual firms, and to participate in the international division of the production process by producing parts and components for assembly abroad. Last, but not least, familiarity with foreign markets and competition abroad will provide incentives for technological change and product improvement.

3.33 It follows that discrimination against the exports of manufactured goods entails an economic loss and hinders the growth of the developing countries. To remedy the situation, equal incentives would need to be provided to production for domestic and for foreign markets. This can be accomplished by giving a subsidy to the exports of manufactured goods at a rate equal to the tariff applied to the same commodity or by using differential exchange rates for the manufacturing sector. Given the cost involved in entering foreign markets, it might even be desirable to provide additional incentives to exports of manufactured goods on a temporary basis.

Promotion of Manufacturing Activities

3.34 While for each particular manufactured product the equal treatment of import substitution and exporting is desirable, the question remains what are "reasonable" rates of tariffs and export subsidies and whether all manufactured goods should receive equal treatment. Assuming that particular measures are used to correct special disabilities and

that the employment objectives are served by a direct or indirect subsidy to the use of labor, as a first approximation one may suggest providing effective protection at equal rates to all manufacturing activities that have passed the infant industry stage. In this way, we would apply the "market principle" in the sense that firms will be established that are profitable under such conditions and existing firms would have to improve their operations, change their product composition, or disappear altogether. At the same time, nonessential imports could be restricted by levying excise taxes that bear also on domestic production.

3.35 The choice of a "reasonable" rate of tariffs and subsidies for mature industries in the developing countries will depend on the particular circumstances of the situation and on the range of other policy measures available to the countries in question. It may be suggested, however, that since most developing countries have small domestic markets, they should aim at eventually reducing the net effective protection of manufacturing to levels observed in countries such as Denmark and Norway, i.e. 10-15 percent. As supporting evidence, one may cite the conclusions of a study carried out by the OECD Development Center, according to which an average level of net effective protection exceeding 20 percent could not possibly be justified even in the least developed countries and this figure declines below 15 percent if we assume that a subsidy to the use of labor is directly provided.

3.36 If, as a first approximation, we wish to set identical effective rates of protection for the mature industries of the developing countries, a method needs to be devised for attaining such a result. It will be recalled that effective and nominal rates are identical if tariffs and export

subsidies are applied to all inputs and outputs at equal rates. But in many developing countries raw materials are available at world market prices either because the country exports them or because they are not dutiable. This practice corresponds to that followed in developed nations and it should be maintained in order to avoid penalizing the relatively simple transformation of raw materials. An equalization of effective rates of protection would then require slight increases in tariffs with the degree of fabrication.

3.37 Let us take the case, for example, where material inputs account for 60 percent of the world market price of products at all stages of processing. A 5 percent tariff on a product in the first stage would then provide 12.5 percent effective protection and the same effective protection could be ensured at the second, third, and fourth stages by imposing tariffs of 8 percent, 10 percent, and 11 percent respectively. At the end, we would get a tariff rate of 12.5 percent, i.e. the same as the effective rate.

3.8 Furthermore, it seems appropriate to set higher tariffs on consumer goods, in part because there is often an irrational preference for foreign merchandise, and in part because the government may wish to discourage the consumption of a great variety of consumer goods that imports provide. These considerations do not play a role in the intermediate products category which includes mostly standardized goods, but the irrational preference arguments might have some applicability to capital goods.

3.39 Exceptions to the proposed equality of effective rates may be made if there is evidence that profitability on the firm level greatly understates (or overstates) the contribution of a particular industry to the national economy. But such exceptions should apply to entire industries rather than to individual firms and only in cases which are well-documented so as to avoid a "slippage" in protection. In other words, the burden of proof should be on those who request favorable treatment. This conclusion also pertains to industries that claim injury from dumping by foreign suppliers.

3.40 In view of our earlier discussion, additional protection would need to be provided to infant industries on a temporary basis. But standard rates of protection should be applied in the case of infant industries also and one should avoid "tailor-made" tariffs. In this way, only such industries are established that can compete with imports if they receive a rate of protection not exceeding a predetermined ceiling. Exceptions to this rule should be made only if evidence is provided that the industry in question promises greater than average cost reductions through the learning process or scale economies.

3.41 Again it is difficult to judge how much protection could be justified on infant industry grounds since there is little empirical evidence on the learning process in individual firms. It does not appear likely, however, that exceptional cases aside, a rate of effective protection more than double that for mature industries could be warranted. At the same time, the additional protection of infant industries

should be set on a declining scale so that its eventual disappearance provides incentives for improvements.

The "Ideal" System of Protection

3.42 The described scheme may be represented by using a basic exchange rate for nontraditional primary products, export taxes on traditional primary exports, and a combination of tariffs and subsidies on manufactured goods. The same result could be achieved by applying differential exchange rates for the three groups of commodities, with further adjustments made for differences in the elasticity of demand among traditional primary exports, and allowing for the traditional protection of infant industries. Putting it differently, as long as domestic prices are the same, it is immaterial to the entrepreneur if prices have been raised (lowered) through the application of tariffs and subsidies (taxes) or through higher (lower) exchange rates on the product in question. Accordingly, the choice between the two alternatives, or a combination thereof, would have to be determined on the basis of considerations of political and administrative feasibility.

3.43 In some cases, however, neither of these alternatives might be feasible because of constraints in policy making. In Chile, for example, the government is said to have obligated itself not to levy special taxes on copper, the major export commodity. Accordingly, the basic exchange rate would have to be applied to copper while tariff-subsidy schemes would need to be used both for nontraditional primary products and for manufactured goods. The example again indicates that protection has to be defined in relative terms. Thus, it can be shown that we obtain the same

result whether there is a 20 percent export tax on copper and a 10-15 percent tariff-subsidy scheme for manufactured goods but not for nontraditional primary goods; or if copper is not subject to taxes, a 25 percent tariff-subsidy scheme applies to nontraditional primary products, and 38-44 percent to manufactured goods. Domestic prices and incentives to production will be identical in the two cases but the exchange rate will be 25 percent higher in the first case than in the second.

Real Exchange Rates

3.44 The application of these policy recommendations assumes that the exchange rate (rates) would be set so as to ensure balance-of-payments equilibrium. As noted in Para 1.17, in the case of a continuing balance-of-payments deficit, imported goods as well as exports would be undervalued, thereby providing an incentive to import and a disincentive to export. While the deficit may be financed by foreign aid or by the inflow of foreign capital, in making policy recommendations one should take account of possible changes in these flows.

3.45 Balance-of-payments equilibrium should be maintained continuously by avoiding the inflation-devaluation cycle which results if continuous inflation is accompanied by periodic devaluations. The existence of such a cycle, observed in several Latin American countries, provides disincentives to exports since the domestic currency equivalent of foreign exchange receipts is subject to uncertainty, and profits or losses are made depending on the phase of the inflation-devaluation cycle. To remedy this situation, exchange rates should be changed pari passu with domestic inflation so as

to maintain the real exchange rate -- the ratio of an index of nominal exchange rates to the domestic price index -- constant. This is in fact being done in Brazil, Chile and Colombia, and is accepted by the IMF.

Summary

3.46 In conclusion, compared to the policies of industrial protection followed by most developing countries, the application of these policy guidelines would entail providing more favorable treatment to nontraditional primary commodities, reducing the protection of manufactured products, and equalizing the incentives for producing manufactured goods for domestic and for export markets. Also, as a general rule, equal incentives would be provided to all branches of manufacturing other than infant industries, and additional protection to infant industries on a temporary basis. Finally, the application of the guidelines would necessitate maintaining the real value of foreign exchange constant.

3.47 For countries that have already embarked on industrialization behind high protection, the application of the guidelines would entail a revamping of the structure of protection. Needless to say, this could not be undertaken instantaneously but would require a transitional period, the length of which would depend on the particular circumstances of the country in question. There would also be differences in the mode of application of these guidelines, again depending on political and institutional factors. Finally, the relative emphasis on direct measures and the tariff-subsidy scheme may differ among countries at different levels of industrialization.

ANNEX

[1]

This method requires modification if quotas are associated with price control. Under price control, demand and supply are not brought into balance and we have to inquire at what price such a balance would be established. Further problems arise if the importer or the domestic producer of competing goods has a monopoly position in the home market.

We also need to make price comparisons in cases where tariffs are prohibitive and there are no imports since domestic competition might now lead to a price lower than the sum of the world market price and the tariff. In such instances, a distinction is made between "potential" and "realized" protection.

[2]

Assuming that input coefficients are constant in the relevant range, and the factors of production (land, labor, and capital) are immobile internationally, the effective rate of protection (z) can be expressed by the use of a simple formula (1), where t and t_m refer to the tariff equivalent of protective measures on the product and on its material inputs, m and v stand for the share of material inputs and value added in the world market price of the product, and w is the domestic value added obtainable by reason of the application of protective measures. If there are several material inputs, a weighted average of their tariffs is calculated, the weights being the share of the individual inputs in the world market price.

$$(1) \qquad z = \frac{w - v}{v} = \frac{\overline{/}(1+t) - m(1+t_m)\overline{/} - \overline{/}1-m\overline{/}}{1 - m} = \frac{t - mt_m}{v}$$

In the clothing example reproduced in the text t equals .20 (20 percent), t_m is .10, while m and v are, respectively, .60 and .40. The numerator of the expression can now be calculated by taking the difference between domestic and world market value added (.54 - .40) or the difference between the tariff on the product and the tariff on the material input weighted by the latter's share in the product price (.20 - .06). In the example, the numerator will be .14, while the denominator is .40, so that we obtain an effective rate of protection of 35 percent. In the case of an export product (meat), the rate of export subsidy (s) replaces the rate of tariff (t); while the values taken by the other variables (m, v, and t_m) are the same as beforehand. In the absence of export subsidies, the numerator of the expression will now be negative (-.06) and so will the effective rate of protection (-15 percent). In turn, with a 6 percent export subsidy, the numerator and thus the effective rate of protection will be zero.

In the above formula all variables have been expressed in percentage terms, with the world market price of the product taken as unity. The formula can also be reinterpreted in expressing all magnitudes in absolute terms as has been done in the example of the text. In such an eventuality, world market values will be multiplied by the exchange rate to make them comparable to domestic values.

A different version of the formula is used if the orginal data are expressed in domestic prices as in the case when calculations are made from the input-output tables of developing countries. Moreover, irrespective of whether free trade or domestic coefficients are used in the calculations, the effective rate of protection can be estimated for individual processing activities or jointly for interdependent activities. For a detailed discussion of the concept and measurement of effective protection, see Bela Balassa, The Structure of Protection in Developing Countries, chs. 1 and 2 (IBRD, 1970, mimeo).

[3]

The adjustment is carried out by the use of equation (2) where a and z' are the unadjusted and adjusted effective rates of protection, r the exchange rate under protection, and r' that under free trade. Thus, if the

$$(2) \qquad z' = \frac{r(1 + z)}{r'} - 1$$

extent of overvaluation is 10 percent (i.e. r'/r equals 1.1), and the effective rate of protection calculated at the going exchange rate is 35 percent, the adjusted (net) effective rate will be 22.7 percent. In turn, an effective rate of protection of -5 percent will be reduced to -13.6 percent.

An alternative procedure is to recalculate the effective rate of protection by converting world market values at the free trade exchange rate. This is shown in the following example where it is assumed that the actual exchange rate is 100 pesos to the dollar and the free trade rate 110 pesos. Estimates of net rates of protection -- nominal and effective -- can then be derived by taking the percentage difference between domestic

values under protection and world market values converted at the free trade exchange rate.

	World Market Values in foreign prices	World Market Values in domestic prices at actual exchange rate	Tariff or Subsidy	Domestic Values	World Market values in domestic prices at free exchange rate
	dollar	pesos		pesos	pesos
Clothing					
Material inputs	0.60	60	10%	66	66
Value added	0.40	40		54	44
Product value	1.00	100	20%	120	110
Meat					
Material inputs	0.60	60	10%	66	66
Value added	0.40	40		40	44
Product value	1.00	100	6%	106	110

[4]

The results also depend on the elasticities of import demand and supply. While we can assume that the prices of commodities imported by developing countries are given (i.e. foreign supply is infinitely elastic), a highly elastic demand for imports will be associated with a high degree of overvaluation since even a small net protection would greatly reduce imports.

The relevant relationships are shown in equation (3), where X and M refer to the value of exports and imports, respectively, η_m is the elasticity of import demand, ϵ_x the elasticity of export supply and η_x the

foreign demand elasticity for the country's exports; ϵ_f, the elasticity of supply of foreign exchange, is derived from the latter two expressions.

$$(3) \qquad \frac{r'}{r} = \frac{\epsilon_f X + \eta_m M}{\frac{\epsilon_f M}{1+s} + \frac{\eta_m M}{1+t}}, \text{ when } \epsilon_f = \frac{\epsilon_x(\eta_x - 1)}{\epsilon_x + \eta_x}$$

[5]

The rate of discrimination in favor of production for domestic markets and against exporting (x) in a particular industry is defined as shown in equation (4). If there are no export subsidies, while the other

$$(4) \qquad x = \frac{w-y}{y} = \frac{[(1+t) - m(1+t_m)] - [(1+s) - m(1+t_m)]}{(1+s) - m(1+t_m)} = \frac{t-s}{y}$$

variables assume the values shown under [2], the value added obtainable in producing for domestic markets (w) will be .54 and that obtainable in exporting (y) will be .34 so that the rate of discrimination in favor of imports and against exports will be 58.8 percent.