TARIFFS AND TRADE POLICY IN THE ANDEAN COMMON MARKET

In this paper, prepared at the request of the Junta of the Andean Common Market (ACM), the author makes recommendations on the establishment of the common external tariff for the ACM. The recommendations cover the use of other instruments of trade policy as well, including export taxes and subsidies, quantitative restrictions, import surcharges, and advance deposit requirements. The policy implications of the common external tariff are also analyzed in the paper.

The recommendations call for setting tariff rates so as to attain the desired structure of effective rates of protection in the Andean Common Market. It is further suggested that export taxes be levied on commodities facing less than infinitely elastic foreign demand and that subsidies be granted to all other exports. The resulting structure of protection would permit maximizing foreign exchange earnings from traditional exports while providing incentives to manufacturing vis-à-vis primary activities in general.

Recommendations are also made for abolishing quantitative restrictions and other nontariff measures of import protection; for establishing a "code of good behavior" on tax, credit, and expenditure incentives; and for applying flexible exchange rate arrangements in the member countries. The author argues however that the harmonization of monetary, fiscal, and financial policies is not necessary for the optimal operation of the ACM.

In revising the paper, the author benefited from discussions at the meetings of the Working Group on the Common External Tariff of the Andean Common Market, held in Lima on January 2-6, 1973. However, the recommendations made in this paper should not be construed to represent the views of the Junta or the World Bank.

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In this paper, recommendations have been made for the establishment of the common external tariff of the Andean Common Market whose members are Bolivia, Chile, Colombia, Ecuador, and Peru. Consideration is further given to the use of other instruments of trade policy, such as export taxes and subsidies, quantitative restrictions, import surcharges, and advance deposit requirements on both the national and on the common market level. Finally, the policy implications of the common external tariff are analyzed.

**Objectives of Tariff Setting**

Tariff setting in the individual member countries of the Andean Group has proceeded in a piecemeal fashion, so that existing tariffs represent the historical result of actions taken at different times and for different purposes. Apart from pursuing general objectives, such as balance-of-payments equilibrium and the development of domestic industry, tariff protection has often been granted in response to demands by special interests. As a result, the tariff structure of the member countries shows a considerable degree of haphazardness and much dispersion.

Tariffs are also high, reflecting the influence of views expressed in the early part of the postwar period by ECLA, according to which the poor prospects for the primary as well as the manufactured exports of Latin American countries call for high protection of domestic industry. Unweighted averages of tariffs, with their standard deviations in parenthesis, are: Bolivia, 54 (19) per-

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1/ In January 1973, Venezuela agreed to join the Andean Group. The details of its participation are still to be determined.
cent; Chile 172 (68) percent; Colombia 70 (37) percent; Ecuador 106 (58) percent; and Peru 90 (18) percent. Corresponding figures for manufactured goods in the United States and in the European Common Market are 7 (2) percent.

High tariffs have discriminated against both primary and manufactured exports through increases in the cost of their inputs and through the overvaluation of the exchange rate as compared to the free trade situation. They have also often had adverse effects in protected industries by encouraging high-cost activities, permitting unduly large profits, and reducing incentives for improvements in production methods. Moreover, the differential incentives provided to particular activities have created distortions in the allocation of resources, including new investments.

The Andean Common Market has a unique opportunity to establish a rational tariff structure that would appropriately serve the objectives of the group. In the Cartagena Agreement, these objectives are stated to be "the balanced and harmonious development of the member countries and the acceleration of their economic growth through integration" (Article 1). It is further added that "balanced and harmonious development should lead to an equitable distribution of the benefits of integration among the member countries by reducing existing disparities among them" (Article 2).

As the objective of an equitable distribution of the benefits of integration is to be served by the special regime provided for Bolivia and Ecuador, the acceleration of economic growth may be taken as the primary objective of tariff


3/ In other words, the exchange rate that ensures balance-of-payments equilibrium under high tariffs is less favorable to exporters than the exchange rate obtainable in the absence of tariff protection.
setting. The attainment of this objective, in turn, requires employing resources in such a way that their contribution to economic growth is maximized. An alternative formulation is to require minimizing the long term domestic cost of earning (saving) foreign exchange which involves equating, on the margin, the domestic cost of foreign exchange in all activities -- whether in exporting or in import substitution. The latter formulation is especially useful in making recommendations on tariff setting and will be utilized in the following.

The Case for Export Taxes

If the countries of the Andean Group faced infinitely elastic foreign demand for all of their exports and there were no differences among their industries as regards the possibilities for productivity improvements and the external economies they create, the rate of economic growth would be maximized -- and the domestic cost of earning foreign exchange minimized -- under free trade. Any departure from free trade would reduce the growth potential of the national economies of these countries as a tariff on a particular commodity would lead to an expansion of its production at a cost of earning foreign exchange in terms of domestic resources higher than in unprotected activities.

The conditions for free trade are not, however, fulfilled in the countries of the Andean Group. For one thing, these countries export several commodities whose prices are affected by the amount they offer for sale abroad. For another, there are differences among their industries as regards the possibilities for productivity improvements through learning by doing and the external economies they create by improving the quality of labor force, encouraging technological progress, and reducing the cost of inputs to other industries.

The case of less than infinitely elastic demand for a country's exports has given rise to the optimum tariff argument. According to this argument, a country can exploit its market power by imposing an export tax or an import duty
at identical rates, when the optimal rate of export tax (import duty) will
depend on the elasticity of demand for the country's exports. The two me-
thods are said to have the same effect in limiting the amount exported by
providing incentives to shift resources from export to import-competitive acti-
vities and equalizing, on the margin, the domestic cost of earning foreign ex-
change through exporting and through import substitution.

The results under the two alternative methods will cease to be identi-
cal, however, if we depart from the unrealistic assumptions that underlie the
textbook exposition of the problem. First of all, not all export industries
face less than infinitely elastic foreign demand. Second, export taxes and im-
port tariffs will affect differently the emergence of new export industries.
Lastly, an industry producing differentiated products may both export and im-
port whereas the standardized products figuring in the textbook exposition are
either exported or imported. At the same time, with few exceptions such as
steel, paper, and fertilizers, manufacturing industries produce differentiated
commodities.

Levying an export tax on products that face less than infinitely elastic
foreign demand will still provide equal incentives to all other industries
irrespective of whether they export or produce for domestic markets, so that
the domestic cost of earning foreign exchange in all activities is equalized.
By contrast, imposing an import duty on the products of all other industries
will favor production for domestic use as against exporting, and thus encourage
import substitution at a domestic cost per unit of foreign exchange exceeding
that for exports. Accordingly, the use of import duties will involve discimi-
nation against export industries which face infinitely elastic world demand;

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1/ I disregard here the possibility that export products may be used as
inputs in other industries.
it will discourage the establishment of new export industries; and, in the case of industries producing differentiated products, it will provide incentives to import substitution while penalizing exports.

Discrimination against exports can be avoided by providing export subsidies at the same rate as tariffs to industries which cannot affect world market prices. The optimal use of market power thus involves either taxing exports that face less than infinitely elastic foreign demand or applying a tariff-subsidy scheme in all other activities. Taking such actions would however require broadening the terms of reference for tariff setting in the Andean Group to include export taxes or subsidies -- a question that will be taken up below.

Export taxes may also be used for income distributional reasons in cases when the domestic supply of exports is inelastic. The same conclusion applies to coffee that is subject to quota allocation under the International Coffee Agreement. In all such instances, foreign exchange earnings are unaffected by the imposition of the tax.

Reasons for the Differential Treatment of Manufacturing Industries

Apart from taxing, explicitly or implicitly, exports that face less than infinitely elastic foreign demand or are supplied inelastically, there are arguments for granting differential incentives to manufacturing as against primary production in general. In particular, the expansion of manufacturing industries may provide indirect benefits in the form of external economies through improvements in the quality of the labor force, technological progress, and reductions in the cost of inputs to other industries.

1/ Needless to say, one has to differentiate among exports if foreign demand elasticities vary among them.

Additional incentives may be granted to new industries to compensate for excess costs incurred during the period of their infancy since otherwise the lack of credit facilities, the overestimation of the risks involved, and the desire to avoid bankruptcy may discourage new investment and thus potential improvements through learning-by-doing may be foregone. But such "infant industry" arguments provide a rationale for the application of special incentives on a temporary basis only. 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 the full knowledge of future changes in the system of incentives.

Irrespective of whether incentives are granted to manufacturing industries on a temporary or on a continuing basis, an optimal policy would involve using a combination of tariffs and export subsidies. This is because of the need to avoid discrimination against manufactured exports that would adversely affect industrial development and economic growth in the countries of the Andean Group.

First of all, in the event of discrimination against exports, the domestic cost of earning foreign exchange through import substitution and through exports will not be equalized, thereby providing incentives for the expansion of high-cost import substituting industries. Furthermore, given the limited size of even the combined markets of the countries of the Andean Group, extra-area exports of manufactured goods will often be necessary to exploit the economies of scale obtainable through building larger plants and specializing in fewer products in individual plants. Last but not least, familiarity with foreign markets and competition abroad provide incentives for technological change and product improvement that are lacking in economies oriented towards import substitution.
Setting Tariffs and Export Taxes (Subsidies)

Assuming for the time being that the arsenal of policy measures available to the Andean Group includes tariffs as well as export taxes and subsidies, the question is how these should be set for optimal effect. As regards export taxes, the answer is simple in the case of coffee; the tax should be set so as to ensure that domestic supply equals the quota allocation plus home consumption. For other export commodities, the answer is more difficult as the elasticities of foreign demand for the country's exports and hence the optimal export tax will depend on a variety of factors, including the world elasticity of demand for particular commodities, the country's share in the world market, the reactions of its competitors, and the possibilities for technological change in the use of the commodity (reductions in requirements per unit of output, substitution by synthetics, etc.) But while these magnitudes are difficult to estimate, in setting tariffs an implicit judgment is necessarily made about them. Making the underlying assumptions explicit, then, will serve rational decision-making.

Since the optimal rate of export taxes depends on the elasticity of foreign demand, it is appropriate to levy such taxes as a proportion of the export price. However, from the point of view of incentives to all other activities, effective rather than nominal rates will be relevant. This is because for the producer tariffs and subsidies not only on its output (the nominal rate of protection) but also on its inputs matter. Both of these are taken into account in calculating effective rates that express the margin of protection on value added in the production process rather than on price as the nominal rate does. The effective rate of protection also provides a measure of the domestic cost of foreign exchange since it is derived as the ratio of domestic value added in a particular activity (i.e. the cost of processing) to value added in world
market prices (i.e. the net saving in foreign exchange) less one.

If incentives to particular activities are provided in effective protection terms, the question needs to be answered how effective rates should be determined and whether they should vary from industry to industry. Disregarding for the moment the case of infant industries and assuming that there are no differences among manufacturing industries with respect to the external economies they generate, the growth contribution of the manufacturing sector will be maximized -- and the domestic cost of earning foreign exchange minimized -- if all industries within this sector receive equal effective protection.

For any industry $i$, let $Z$ denote the effective rate and $T$ the nominal rate of protection, $W$ domestic and $V$ world market value added, $P$ the domestic price, $A_{ji}$ the input-output coefficients for any input $j$. The effective rate of protection can then be expressed as in (1) when the first term in the denominator will be the world market value of the commodity produced and the second term that of its material inputs.

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Z_i = \frac{W_i}{V_i} - 1 = \frac{P_i - \sum_j A_{ji}}{1 + T_i} - 1
\]

All magnitudes in (1) are expressed in domestic prices at the actual exchange rate; to calculate the net effective rates which provide a comparison with the free trade situation, the values in the denominator have to be recalculated in terms of the exchange rate that would obtain under free trade. If, for example, the effective protection calculated at the existing exchange rate of 100 pesos to the dollar is 20 percent, and the free trade exchange rate is 110 pesos to the dollar, the value of the denominator will be increased by 10 percent and hence the net effective rate will be 9 percent. (*The Structure of Protection in Developing Countries*, Ch.5. For mathematical proof, see Trent J. Bertrand, "Decision Rules for Effective Protection in Less Developed Economies", *American Economic Review*, September 1972.)
There is little information on the variability of external economies among manufacturing industries. Correspondingly, granting equal effective protection to all industries may be used as a general rule. Exceptions from this rule should be made only if there is sufficient evidence that the external economies generated by a certain industry are greater or smaller than the average.

The Level of Effective Protection in the Andean Group

The question remains at what rate should protection be provided to manufacturing industries in the countries of the Andean Group. The optimal rate of protection will depend on a variety of circumstances, such as the size of the country, its level of industrial development, and the prospects for primary activities. While there is little empirical evidence on the relevant factors, a consideration of the experience of present-day developed countries, the adverse effects of high protection in developing nations, and the economic cost involved in providing protection lead to the conclusion that effective protection of mature industries exceeding 10-15 percent is likely to involve costs that are not commensurate with the expected benefits.

The figures should be interpreted in net terms, i.e. after adjustment for overvaluation as compared to the free trade situation. They correspond to the long-term target for protection in Mexico that has a gross national product substantially larger than the Andean Group taken as a whole. Mexico aims at reducing the excess of domestic over foreign prices of manufactured products to 25 percent. For industries using manufactured goods as inputs, this corresponds to a net effective protection of about 10-15 percent.

However, a net effective protection of 10-15 percent on mature industries can only be regarded as a long-term target for the Andean Group. This is because, as we have seen, tariffs in the individual member countries are generally

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several times higher than the desired level and large reductions in tariffs within a relatively short period would create serious dislocation in protected industries. Also, the average of the so-called minimum common external tariff (MCET), destined to provide a margin of preference to the industries of the partner countries, is nearly 50 percent.

This is not to say that in setting the common external tariff, MCET should be regarded as a minimum. In this connection, it should be noted that the rationale given for establishing a relatively high minimum common external tariff has been to provide a margin of preference in intra-area trade for the period during which tariffs on this trade are being reduced. This rationale will disappear, however, by the time internal tariffs are eliminated, and the same preference margin can then be provided with a lower external tariff.

In individual industries, MCET averages range from 33 percent on chemicals to 67 percent on textile products, with a simple average of 48 percent for the manufacturing sector as a whole. By comparison, nominal rates of protection on manufactured goods averaged 31 percent in Mexico in 1960 and 48 percent in Brazil in 1967. However, in the case of Brazil, the tariff exemptions and export subsidies granted in recent years have to a considerable extent eroded the protective effect of the tariff.

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1/ Junta de Acuerdo de Cartagena, El Arancel Externo Mínimo Común, Lima, September 8, 1972, Table 1.

2/ Tariffs on intra-area trade are to be eliminated by 1980 in Chile, Colombia, and Peru and by 1985 in Bolivia and Ecuador. In turn, on items where rates of national tariffs are lower than the MCET, they have to be raised to this level by 1975 in Chile, Colombia, and Peru and by 1980 in Bolivia and Ecuador. According to the compilation of the Junta, there are 986 such items in Colombia, 126 in Chile, and 212 in Peru; their number will be the largest in Bolivia which has the lowest tariffs in the group. But the main impact of the MCET lies in the ending of tariff exemptions that have been widely employed, in particular in Chile and Peru, to encourage the establishment of domestic industries using imported inputs, especially machinery.

3/ The Structure of Protection in Developing Countries, pp.123 and 190. -- In cases when quantitative restrictions are applied or tariffs are prohibitive, the nominal rate of protection equals the ratio of domestic to foreign prices.
As the economic size of the Andean Common Market, whether measured in terms of GNP or the consumption of manufactured goods, is much smaller than that of Brazil and Mexico, the scope for import substitution will also be smaller and its cost higher than in the two countries. Correspondingly, it would be desirable that the common external tariff -- to be applied by Chile, Colombia, and Peru by 1980 and by Bolivia and Ecuador by 1985 -- should not exceed tariffs in Mexico and Brazil. It would further be desirable to reach agreement on future tariff reductions so as to bring down their level to the long-term target.

It has been suggested that special incentives to infant industries may be granted on a temporary basis and on a degression scale. This practice has indeed been followed in Brazil in recent years in setting tariffs for new industries so that the additional protection provided disappears within ten years. Mexico goes even further in requiring that the domestic prices of new products should not exceed foreign prices by more than 25 percent which is the long-term target for all manufacturing.

The rule applied in Mexico reflects the desire to avoid establishing high-cost industries. In turn, as long as the Andean Group protection levels exceed the desired target, there is little reason to grant additional protection to infant industries. It is suggested therefore that, in setting the common external tariff, new industries should not be given special treatment.

Additional Criteria for Tariffs and Export Subsidies

There is further the question if in setting tariffs and export subsidies for manufacturing industries, one should introduce criteria other than industrial

\[1\] This is in line with the practice followed so far in the Andean Group. Thus, in the framework of sectoral programs for industrial development in the petrochemical and the metalworking sectors tariffs have been set at levels comparable to those of the MCET. However, in the case of petrochemicals, the use of a reference price as a basis of tariff setting raises the level of the duty in periods of low world market prices, The Common External Tariff for the Sectoral Programmes for Industrial Development, Lima. English translation of Spanish original circulated in August 1972.
promotion. The minimum common external tariff of the Andean Group incorporates several such criteria, including labor intensiveness, technological sophistication, the uses of product, and the existence of domestic production in the Andean area. These criteria have also been proposed for establishing the common external tariff.

Additional protection to labor intensive industries is designed to increase employment. This purpose would however be better served by subsidizing labor use, e.g. in the form of financing social security contributions from the general budget, because in this way employment in all industries would be encouraged while tariffs provide incentives for the use in protected industries of both labor and capital. And while it has been suggested that protection be used as a second-best measure since the Common Market does not have authority over social security contributions, to the extent that the employment problem varies among the member countries this can be left to the individual governments which have such authority. Actions by individual countries would further be desirable to remedy the situation in cases when interest rates are overly low and require the rationing of loans. Such actions by national authorities would correct distortions in factor prices without however interfering with the freedom of intra-area trade.

Additional protection for technologically complex industries may well be at cross-purposes with the objective of increasing employment. Nevertheless, should prospective improvements through learning-by-doing and external economies be especially large in these industries, preferential treatment would be warranted. And although ideally such treatment should be provided by directly subsidizing research and product development, there is a case for additional protection in the event that direct measures cannot be used on the Common Market level.

Among similar products, MCET provides greater protection to consumer goods than to inputs and capital goods. This may be justified on the grounds that con-
consumers have an irrational preference for foreign goods which involves a cost to
the national economy in the form of the higher imports of consumer goods which
have domestic counterparts. This argument may also be used in setting the com-
mon external tariff, but one should avoid giving on this basis excessive protec-
tion to domestic industry that is likely to lead to inefficiencies.

In this connection, it should be noted that higher protection of consumer
goods on income distributional grounds is not warranted. While taxing the con-
sumption of luxury goods would appear to be an appropriate measure in countries
where income tax collections encounter difficulties, such taxes should also be
levied on domestically produced luxury goods lest their production be encouraged.
This may be done by levying excise taxes on luxury imports and production at
identical rates.

MCET further differentiates among commodities according to whether they
are or are not produced in the Andean area, and it has been proposed to apply
such a distinction also in the common external tariff. While lower tariffs on
imported inputs (capital goods as well as raw materials and intermediate products)
appear to be an attractive way to subsidize particular activities, their poten-
tial adverse effects on resource allocation caution against their use. First of
all, low tariffs on such imports encourage the expansion of domestic industries
which use them as inputs, thus raising the import bill and penalizing the do-
meitic production of capital goods and materials. Second, incentives would
thereby be given to capital-intensive industries and to the use of capital-
intensive methods of production. Third, the higher price of products using
domestically produced inputs would lead to substitution in consumption in favor
of products that embody imported inputs. Last but not least, low tariffs on im-
imported commodities which are not presently manufactured domestically will tend
to discourage their future domestic production.
Deriving Nominal from Effective Rates

The suggested scheme calls for levying optimal export taxes and providing effective protection at equal rates to all manufacturing industries, with exceptions made in cases when external economies can be shown to differ from the average or there is an irrational preference for foreign goods. But, as one cannot set effective rates directly, the desired structure of effective rates would have to be achieved by appropriately setting nominal tariffs and export subsidies on particular products. This can be shown by a simple example.

Let us assume that the basic exchange rate applies to primary commodities for which world market prices can be taken as given and that material inputs account for 60 percent of the world market price of all products, irrespective of their stage of processing. Under these assumptions, a 5 percent tariff cum export subsidy on a commodity at the first stage of processing raw materials will provide its producer 12.5 percent effective protection. In order to assure the same rate of effective protection to activities at successive stages of processing, tariffs and export subsidies will have to be set at 8, 10, and 11 percent, respectively, at the second, third, and fourth stages. Eventually, we will get a tariff-subsidy rate of 12.5 percent, i.e. the same as the desired effective rate.

For various reasons, however, the calculation is much more complicated in practice. Commodities at a particular stage of processing may not use exclusively goods from the previous stage as inputs; machinery that is at the highest stage of processing is used as an input at all stages; and the share of value added in the product prices varies from one commodity to another -- both at a particular stage and between stages of processing.

These difficulties are apparent in the case of the minimum common exter-

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1/ The calculation has been made by the use of equation (1), when domestic prices are assumed to equal the sum of the world market price and the tariff (export subsidy).
nal tariff that has been derived by setting tariffs for nine stages of processing. Tariffs rise 10 percent in intervals from stages 1 to 7, with additional adjustments made for the reasons noted earlier and lower tariffs set for stages 8 and 9. The application of this procedure has introduced substantial unintended variations in effective rates.

To begin with, commodities in the same sector have been classified in a variety of groups; thus, products in the metal working sector have been classified in groups 1 to 9, in the textile sector from 2 and 7, and in glass production from 1 to 6. In particular, some products in stage 7 use inputs from stages 2 and 3, with differences in tariffs on the product and its inputs of 40-50 percent resulting in very high effective rates.

Also, for the sake of avoiding high domestic prices for machinery used as an input, tariff averages on domestically produced goods decline from 74 percent in stage 7 to 39 percent in stage 8 that comprises machinery. As a result, some of domestically-produced machinery receives negative effective protection. Lastly, as effective rates vary inversely with the share of value added in the product price, there is considerable variability in these rates for products at the same stage of processing.

It follows that, in order to obtain the desired structure of effective rates of protection by setting nominal rates, nominal rates would have to be set on a commodity-by-commodity basis and we need information on material input and value added coefficients for individual commodities. In Sweden, where this method was first applied, such information was collected from manufacturers. Note, however, that apart from the availability of data, the task of the Swedish Tariff Commission was facilitated by the fact that nominal tariffs are low and hence the possibility of large errors is excluded.

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The effective rate concept has been used more recently to prepare the tariff reform in Korea. But, in the absence of information on the use of domestically produced inputs, effective rates were calculated by combining the value of these inputs with value added in particular activities. Now, as the target effective rate was determined with respect to the sum of value added and the value of domestically produced inputs, rather than value added alone, measured effective rates differ from the "true" effective rates.

Within the Andean Group, input-output tables are available for Chile, Colombia, and Peru. These tables provide information on some combination of twenty-eight industries, representing a considerable degree of aggregation, with agriculture, chemicals, and basic metals taken as single commodity categories. Thus, the individual categories comprise a considerable diversity of products, including also commodities at different stages of processing. At

\[ B_i = \frac{P_i - \sum_j A_{ji}^m r_{ji}}{1 + T_{ij}} - \frac{\sum_j W_{ji} r_{ji}}{1 + T_{ij}} \]

\[ K_i = \frac{P_i - \sum_j A_{ji}^m}{1 + T_{ij}} - \frac{\sum_j W_{ji} A_{ji}^m}{1 + T_{ij}} \]

\[ 1/ \] It should be added that the rate thereby obtained is not equivalent to the so-called Bruno ratio (the direct plus indirect domestic cost of foreign exchange), since the latter but not the former adjusts for the imported inputs used in the production of domestic inputs. Thus, the Bruno ratio is calculated as the sum of direct plus indirect domestic value added divided by the difference between the world market price of the commodity and that of the imported inputs used directly and indirectly in its production. If we denote direct domestic input and importing input requirements by \( A_{ji}^d \) and \( A_{ji}^m \) respectively, and elements of the matrix of direct and indirect domestic factor and imported input requirements by \( r_{ji} \), the Bruno ratio (B) and the rate of effective protection calculated in Korea (K) for industry i will be as follows:
the same time, the commodity composition of particular categories differs from country to country and it may have changed since the time the input-output tables were prepared.

An additional consideration is that tariffs in the three countries are often prohibitive and they extensively use quantitative restrictions to protect domestic industry. In order to obtain world market values from the domestic values shown in the input-output tables, one would therefore need to make comparisons between domestic and world market prices. Such price comparisons are however subject to large errors. Considering the problems associated with deriving world market values and the lack of disaggregation in the data, then, the input-output tables of the three countries can be of little use for tariff setting.

An alternative procedure is to use "borrowed" coefficients in setting nominal rates. Input-output coefficients designed to represent world market values have been derived in a sixty-seven industry breakdown on the basis of the input-output tables of Belgium and the Netherlands and have subsequently been used in estimating effective rates of protection in selected developing countries. The use of these coefficients has the double advantage that they provide a considerable degree of disaggregation and one avoids the thorny problem of collecting data on the ratio of domestic to foreign prices.

It may be objected that the commodity composition of industries in the countries of the Andean Group differs from that in Belgium and the Netherlands,


2/ The Structure of Protection in Developing Countries, Ch.4
thus making the coefficients derived from the input-output tables of the two countries inappropriate for tariff setting. However, in the course of their economic development the industrial structure of the countries of the Andean Group will eventually approach that of Belgium and the Netherlands, so that the input-output coefficients of the latter may be more useful for long-term tariff setting than historical data for the countries of the Andean Group themselves.

Belgian-Dutch coefficients should further be supplemented by information contained in the latest U.S. input-output table which distinguishes among 370 sectors of which 250 are manufacturing industries, as well as in international comparisons of input-output structures undertaken by UNIDO and in the industry profiles prepared by USAID and UNIDO. The information thus collected, together with data available on the firm level in the member countries, can provide a basis to set nominal rates of protection for arriving at the desired structure of effective rates. This can be done in two ways: by proceeding on a commodity-by-commodity basis from lower to higher stages of processing or by inverting the complete input-output matrix which incorporates the desired effective rates.1/

The former method has disadvantages in handling goods at higher stages of processing that are used as inputs at lower stages; in turn, the latter method is sensitive to errors in the coefficients. In practice, it is advisable to combine both approaches. This can be accomplished by proceeding from lower to higher levels of fabrication and checking the results by the inversion of the full matrix. The procedure can be repeated several times until satisfactory results are reached.

1/ For a description of the latter procedure, see Bela Balassa and D.M. Schydowsky, "Indicators of Protection and Other Incentive Measures", in The Role of the Computer in Economic and Social Research in Latin America, New York, National Bureau for Economic Research (forthcoming, 1973).
It should be emphasized that, whatever the method chosen, the calculation is subject to considerable error possibilities. This is largely because of the variability of the share of value added in the product price and the difficulties of separating goods at different levels of fabrication, when some commodities are used as inputs as well as outputs. The sensitivity of the effective protection measure to the assumptions made in regard to the share of value added and the level of fabrication, then, counsels in favor of limiting the dispersion of tariff and subsidy rates.

The Availability of Instruments of Protection

It has been assumed so far that it would be possible to use a combination of export taxes, subsidies, and tariffs in the Andean Group. Should this not be the case, the above recommendations would need to be modified. The exclusion of export taxes could be handled relatively easily. Thus, results obtained by levying export taxes on commodities facing less than infinitely elastic foreign demand can also be obtained if the basic exchange rate was applied to the commodity for which foreign demand is the least elastic while a combination of tariffs and export subsidies were used for all other commodities. This can be shown by a simple example.

Consider the case when there are three groups of industries producing (a) primary exports facing less than infinitely elastic foreign demand, (b) primary commodities for which world market prices can be taken as given, and (c) manufactured products. If, for simplicity, we disregard input-output relationships among these industries, relative domestic prices -- and hence the system of incentives -- will be the same under the following two alternatives.

Take first the case when the basic exchange rate is applied to primary products for which world market prices can be taken as given while an export tax of 5 percent is levied on commodities facing less than infinitely elastic foreign demand and tariffs cum export subsidies of 12.5 percent are provided
to manufactured goods. If, instead, the basic exchange rate is applied to primary exports facing less than infinitely elastic foreign demand and export taxes are not used, the same results can be obtained by setting tariffs and export subsidies for the other two commodity categories at rates of 5 and 18 percent, respectively.

While an optimal trade policy can be applied even if no export taxes are levied, this will not be the case if we exclude the possibility of using export subsidies at the common market level. The Andean Common Market does not presently have authority to set export subsidies, nor has any effort been made to coordinate the measures used in the individual member countries. At present, Colombia grants a 15 percent subsidy in the form of tax certificates to all noncoffee exports while Chile, Ecuador and Peru provide subsidies to manufactured exports on a selective basis. These subsidies do not however apply to intra-area trade.

An optimal policy would require harmonizing the rates of export subsidies since otherwise the protective effect of the common external tariff will vary among countries and their competitive position in intra-area trade will also be affected. In particular, the imposition of export subsidies by a member country will increase its foreign exchange receipts, so that a lower exchange rate (expressed as domestic currency per unit of foreign currency) will be required to keep its balance of payments in equilibrium. The lower exchange rate, in turn, will reduce the protective effect of the common external tariff in the country in question and lessen its competitiveness in intra-area trade.

These consequences may discourage the application of export subsidies which is however necessary in order to avoid discrimination against exports that involves an economic cost. Exportation, and particularly the development of new export industries, is of much importance for the Andean Group whose combined market for manufactured goods is only half as large as that of Argentina,
Brazil, or Mexico. Yet, in recent years these countries, too, have given considerable attention to the promotion of exports.

Apart from consumer goods, in the case of which additional protection may be provided to offset the effects of irrational preference for foreign goods, export subsidies should be ideally given at the same rate as tariffs. To the extent that this cannot presently be done, one should endeavor to keep tariffs low so as to avoid discrimination against the exports of commodities for which world market prices can be taken as given. Also, countries should be encouraged to levy taxes on exports facing less than infinitely elastic foreign demand since in other industries the same extent of protection can then be provided by lower tariffs. Excepting the case of commodities which are exported in appreciable quantities by more than one country, export taxes could be set by the national governments that are familiar with conditions in foreign markets.

In addition to preventing discrimination against exports, low tariffs would help to avoid wide variations in effective protection. This purpose would also be served by keeping the differentiation of tariffs to a minimum. Finally, in the presence of low tariffs, low rates of export subsidies will suffice and thus there will be less risk of retaliation on the part of nonmember countries.

The Use of Import Restrictions Other Than Tariffs

In addition to tariffs, the countries of the Andean Group use a variety of protective measures on imports. They include advance deposits, import surcharges, and multiple exchange rates all of which affect import prices directly, as well as quantitative restrictions in the form of licenses, quotas, import prohibitions, and exchange control that have an indirect effect on import prices.

1/ Such taxes are now applied in Bolivia, Ecuador, and Peru.
Under the Cartagena Agreement, the use of these measures on intra-area trade should cease by the time tariffs on such trade are abolished. Correspondingly, the following discussion will be limited to the effects of nontariff measures on extra-area imports.

Advance deposits and import surcharges have the same effect as a tariff and their incidence can be expressed in terms of import value. The tariff equivalent of advance deposits can be calculated on the basis of information on the length of the period for which advance deposits are made, the size of the deposit, and the interest rate on loans designed to make such deposits. In turn, if import surcharges are levied in specific rather than in ad valorem terms, the amount paid has to be related to the c.i.f. value of imports.

Intercommodity differences in rates of advance deposits and import surcharges would subvert the establishment of the common external tariff by altering the structure of protection whereas their across-the-board application would affect the level of protection in the individual countries, and hence the margin of preference on intra-area trade. Correspondingly, it would be desirable to restrict the scope of application of these measures to cases of temporary balance-of-payments disequilibrium when they could be employed during a limited period on an across-the-board basis.

In turn, multiple exchange rates are equivalent to a combination of tariffs and export subsidies. Subject to the agreement of the International Monetary Fund, they could be made part of the system of protection in the way indicated above. This would however require that, apart from the case of commodities subject to export taxes, all the member countries apply the same set of multiple exchange rates in trade with nonmember nations and use a single exchange rate in intra-area trade that should be free of restrictions.

Finally, quantitative restrictions in their various forms raise the domestic price of imports and of goods competing with imports indirectly by
limiting the amount imported. If there is competition in domestic markets, the nominal protection resulting from the application of quantitative restrictions can be expressed as the percentage difference between domestic and foreign prices. The determination of such price ratios is however difficult if quality differences exist between domestic and foreign merchandise.

Whatever their form, quantitative restrictions applied by the individual member countries to imports from outside the area interfere with the equalization of rates of protection on extra-area imports and affect the margin of preference in intra-area trade. To avoid these consequences, such restrictions would have to be set jointly by the member countries on extra-area imports.

But, apart from the well-known arguments against quantitative restrictions, the use of quantitative restrictions on the Common Market level would encounter serious administrative difficulties. It is suggested, therefore, that the member countries eliminate quantitative restrictions together with their advance deposit requirements and import surcharges. And while the latter measures could be applied by the individual countries in the event of temporary balance-of-payments difficulties, their application should be subject to approval by the Junta.

**Exchange Rate Policies**

We have seen that the adoption of a scheme of common tariffs, export taxes, and export subsidies, as well as the abolition of quantitative restrictions and various other protective measures, are necessary to harmonize the system of protection among the member countries of the Andean Group. Now, if exchange rates are free to adjust and no other incentive measures are applied, distortions in competitiveness will be eliminated.

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1/ *The Structure of Protection in Developing Countries*, pp.92-93.
But the relative competitiveness of the member countries' industries will vary over time if the rate of inflation differs among countries and devaluations take place only intermittently. Such variations will occur in conjunction with the inflation-devaluation cycle as the deterioration in competitive position of a country with higher rate of inflation will give place to a sudden improvement at the time its currency is devalued.

The following example can serve as an illustration. Take the case when prices in countries A and B, respectively, rise 5 and 3 percent a year faster than average world inflation, and devaluation occurs whenever the cumulative price change in a particular country reaches 15 percent. Starting out from an equilibrium situation, country A's competitive position vis-à-vis country B will now deteriorate at an annual rate of 2 percent over a period of three years at which time devaluation will provide A with an absolute price advantage of 9 percent. This advantage will decrease in the next two years and, at the end of the fifth year, B's 15 percent devaluation will result in a price disadvantage of 10 percent for A. The process will repeat itself as long as higher (or lower) than average rates of inflation are not accompanied by equivalent changes in exchange rates.

Variations in exchange rates adjusted for changes in relative prices are equivalent to variations in tariffs and subsidies. Correspondingly, if devaluation takes place only intermittently, there will be shifts in competitiveness among the member countries and uncertainty is created in regard to both the domestic currency value of foreign exchange proceeds and the sale price of competitors in other countries. These effects are accentuated in cases when countries "overvalue"; i.e. they devalue more than warranted by changes in domestic prices and their balance-of-payments position.

In such circumstances, exports will be discouraged and the progress of integration may be jeopardized for fear of sudden shifts in competitiveness.
These adverse consequences could be avoided if member countries adopted a policy of devaluing pari passu with domestic inflation. This is equivalent to maintaining the real exchange rate -- the ratio of an index of nominal exchange rates to the domestic price index -- constant.

Among the member countries of the Andean Group such a policy has been adopted in Colombia and was used for a time in Chile. In order to avoid sudden changes in intra-area trade due to variations in the real exchange rate, the policy of devaluing pari passu with domestic inflation should be adopted by common agreement of all member countries in the application of Article 26d of the Cartagena Agreement.

Harmonization of Monetary, Fiscal, and Financial Policies

Article 26d also calls for the harmonization of monetary, fiscal, and financial policies. But, as long as exchange rates are free to adjust, countries may follow different trends in these policies. This is because adjustments in exchange rates will offset differences in general economic policies.

The conclusion does not apply however to policies that have differential effects on particular economic activities. Such policy measures include tax, credit, and expenditure preferences. Tax incentives may be given in the form of tax holidays or accelerated depreciation provisions whose application is limited to certain activities. In turn, credit incentives may be granted by providing preferential credit terms to priority activities whereas expenditure incentives can take the form of the government reimbursing selected industries for certain costs or providing services at less than cost to them.

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The described incentives create discrimination among economic activities and thus distort competitiveness among the member countries. To eliminate these sources of distortions, it will be necessary to adopt a "code of good behavior" that provides guidelines on the application of tax, credit, and expenditure preferences. These guidelines should be equally applicable to private and public industry.

Conclusion

Guidelines on tax, credit, and expenditure preferences would supplement the adoption of common tariffs, export taxes, and export subsidies, the abolition of quantitative restrictions and various other protective measures, and the application of flexible exchange rate arrangements that have been recommended in this paper. All these measures are designed to serve the acceleration of economic growth by removing sources of distortions that lead to a misallocation of resources in the member countries.

This objective would also be served by rationalizing the structure of tariffs, export taxes, and export subsidies on trade with non-member countries and avoiding excessive protection that breeds inefficiency and high costs.

Tariff protection may be reduced in two steps: by adopting a common external tariff that is substantially lower than the tariffs of the member countries and by reaching agreement on future tariff reductions until the desired level of protection is reached. This would provide incentives to manufacturing vis-à-vis primary activities in general, with taxes levied on export products that face less than infinitely elastic foreign demand. However, apart from these products, import substitution and exports should receive equal treatment.