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Incentives and Protection Policies in Relation to Comparative Advantage and Labor-Intensity in Philippine Manufacturing: An Evaluation

by

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ABSTRACT

The paper evaluates the effectiveness of the country's system of incentives in promoting the objectives of efficiency and employment expansion in the manufacturing sector. For this purpose, it lays out a framework by which industries are ranked on the basis of their desirability in terms of their comparative advantage position or relative efficiency in production and of their labor-intensity indicating their employment-generating capacity. It then tests the hypothesis suggested by the Hechscher-Ohlin-Samuelson factor proportions theory of trade that a labor-abundant country like the Philippines would have its comparative advantage in labor-intensive industries, and would, if it followed its comparative advantage, produce and export relatively more of labor-intensive products. The country's incentives system by introducing "market distortions" is raised to explain the divergence of the observed factor content of production and exports from what it is expected to be under efficient resource allocation conditions.

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I. Introduction

The purpose of this paper is to indicate the directions in which incentives and protection policies might be improved to promote manufacturing industries in which the country has comparative advantage and the most capacity for generating employment in the light of the overwhelming need to alleviate the twin problems of mass unemployment and economic poverty. The paper starts with the question: given the country's present economic resources, what are the manufacturing industries that most deserve to be promoted in terms of government policy support towards the achievement of its goals of providing more jobs and greater income for the people? It then proceeds to turn to what economic theory provides by way of an answer and focuses on the Hechscher-Ohlin-Samuelson (HOS) factor proportions theory of trade. In brief, theory predicts that under efficient resource allocation conditions, a country would have its comparative advantage in the commodities which use more intensively its relatively abundant resource. The hypothesis is made that a labor-abundant country like the Philippines would have its comparative advantage in labor-intensive industries, and would, if it followed its comparative advantage, produce and export more of labor-intensive industries. If such were the case, this would directly address the national problems of unemployment and poverty. To examine this hypothesis, a framework is formulated to prioritize or rank manufacturing industries on the basis of their

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desirability in terms of their comparative advantage or relative efficiency in production and their labor-intensity to indicate their employment-generating capacity. Such a ranking is drawn up for 94 industries which are grouped into four main industry categories: group I, competitive and labor-intensive; group II, competitive and capital-intensive; group III, noncompetitive and labor-intensive; group IV, noncompetitive and capital-intensive. These industries are then examined in relation to the expected results under the HOS theory of comparative advantage. The empirical results suggest that the country's comparative advantage is in labor-intensive manufactures; however the country's productive resources have not actually moved towards these relatively efficient and labor-intensive industries. Instead, these have gravitated towards the capital-intensive manufacturing industries, a great number of which are very cost inefficient from the social viewpoint.

The country's protection and incentives system is raised to explain the divergence of the observed factor content of production and exports from what would be expected to arise under efficient resource allocation conditions. The view is taken that the protection and incentives system in the country introduces "market distortions" which have been effective in reallocating productive resources from industries where these, otherwise, would be. To explain these "market distortions", a brief summary is given of the history of protection and incentives policy in the Philippines since 1950 and of the structure of protection before 1981, the year tariff reform was implemented, and after 1981. Then, the paper goes on to discuss how the

particular pattern of protection, incentives and subsidies could have distorted the structure of production so that the "wrong" industries became privately profitable, promoting these at the expense of industries where the most potential for generating output and employment can be found. The study concludes with the suggestion for review and restructuring of the government's policies on protection, incentives and subsidies so that the most deserving industries by virtue of their social efficiency and employment potential might be encouraged by a system where the bias against them are much lessened if not entirely removed.

II. Prioritization Framework for Industrial Promotion

The literature in Philippine economic development, in particular, that in industrial promotion policies, is strikingly silent on the use of specific criteria for the promotion of industries in manufacturing.[1/] That such a need is important in evaluating the success or failure of incentives system to promote industries to meet the country's stated goals of economic recovery and employment expansion, has come out clear in recent discussions.[2/] It seems basic to all this, that we first know very clearly, even in general terms at first, what sort of industries are desirable from the overall viewpoint of the economy in terms of their potential contribution to economic growth and employment. In a study of industrial promotions policy in the Philippines,[3/] it was found that incentives policy in the Philippines since the end of World War II did not effectively discriminate among efficient and inefficient industries. While investments in some industries appear very high cost, in others they are indicated to be economically sound, i.e., investments were made in developing highly productive, efficient and low-cost sectors. The decisions to go into these high-cost industries was indicated to have been encouraged by a system of protection and incentives that artificially made profitable the operation of these industries when in reality they wasted more domestic resources than they earned. Clearly, the country would have benefitted more if these resources were shifted from these type of industries to the more efficient users of resources. In the context of the government's efforts to stimulate economic growth and employment, it is imperative that the government be provided with

more substantive guidelines for prioritizing industry areas for investment promotion.

Given the two goals of more employment and greater cost efficiency, it is desirable that industries to be promoted meet both criteria of cost efficiency and of labor-expansion capacity. Since the two objectives of maximizing the current levels of output and employment are not necessarily consistent for any particular industry (i.e. satisfying one objectives does not necessarily satisfy the other objective in reference to an industry), there is a need for a prioritization framework that would require both objectives to be satisfied by an industry to qualify for promotion through the various incentive packages offered by the government. These criteria are consistent with what economic theory tells us to expect to be in the country's greatest economic benefit by pursuing its comparative advantage.[4/] This can be restated as a hypothesis involving the Hechscher-Ohlin-Samuelson (HOS) theory of comparative advantage in relation to the capital and labor resource endowments of the country. Stated simply, the theory predicts that under normal market conditions in a 2-commodity and 2-country model, the more labor-abundant country would produce and export more of the labor-intensive commodity. This has been generalized to include a multi-commodity, multi-country model[5/] which predicts that a labor-abundant country like the Philippines would tend to produce more and export more of labor-intensive industries under efficient resource allocation, i.e. when a country is following its comparative advantage. The prioritization criteria then is as follows:

Define,

$$F_j \in C \text{ if } (d_j/s) < 1, \text{ otherwise} \quad (1)$$

$F_j \in \hat{C}$, where:

F_j - industry j

C - cost competitive industry

d_j - domestic resource cost ratio of industry j

s - shadow exchange rate

$\hat{C}$ - cost competitive industry

Define further,

$$F_j \in L \text{ if } (k_j/\bar{k}) < 1, \text{ otherwise} \quad (2)$$

$F_j \in \hat{L}$, where:

L - labor-intensive industry

k_j - capital-labor ratio of industry j

$\bar{k}$ - capital-labor ratio equal to ₱30,000 per worker

$\hat{L}$ - capital-intensive industry

Therefore,

$$\overline{/(F_j \in C) \in \underline{L}/} \text{ if } (d_j/s) < 1, \text{ and } (k_j/\bar{k}) < 1. \quad (3)$$

An industry qualifies for promotion if it satisfies the condition in equation (3) which is the combination of the conditions in equations (1) and (2).

Equation (3) makes use of the concept of the domestic resource cost ratio (DRC) which is d_j in the above formulation. It is an investment criterion by assessing the true costs of projects on industries in relation to their true benefits, costs and benefits being evaluated in terms of their "social or opportunity" values to society. The profitability or desirability of a project or an industry is measured by comparing the costs of the factor foreign exchange in that industry with the shadow price of foreign exchange. Operationally, the domestic resource cost ratio is defined as the domestic resource cost per unit of foreign exchange saved (by an import-substituting project or industry) or earned (by an export-earning project or industry[6/]. The numerator is the sum of the direct value added of domestic factors (suchas labor, capital and land) evaluated at opportunity costs and the value of the nontraded domestic commodity inputs evaluated in terms of their accounting value. The denominator is the net foreign exchange earned or saved (or international free trade value added). Thus, the domestic resource cost per unit foreign exchange saved or earned is estimated as follows:

$$d_j = \frac{\Sigma f_{sj} v_s + \Sigma a_{ij} p_i}{u_j - m_j} \qquad (4)$$

where d_j is the domestic resource cost ratio; f_{sj} is the coefficients per unit j for primary factors s in industry j; v_s is the shadow price of the primary factor s; a_{ij} is the coefficient per unit j for nontraded domestic commodity input i in industry j; p_i is the accounting price of nontraded domestic commodity input i;

U_j is the marginal dollar revenue of commodity j; and m_j is the marginal dollar import requirements for the unit production of commodity j. Alternatively, equation (6) can be expressed as

$$d_j = \frac{\Sigma \bar{f}_{sj} v_s}{u_j - \bar{m}_j} \qquad (5)$$

where $\bar{f}_{sj}$ refers to the total of both direct and indirect primary factors of production, and where the indirect primary factors are also evaluated at their shadow prices, and $\bar{m}_j$ refers to the total of direct and indirect marginal import requirements per unit j. This is to underline the inclusion of only the nontraded domestic inputs in $\Sigma a_{ij} p_i$ and the inclusion of the imported inputs of nontraded inputs in m_{ij}. This ensures that $\Sigma a_{ij} p_i$ will be identical with the indirect value added of domestic primary factors of production so that the numerator will consist of the total direct and indirect domestic value added measured at opportunity costs.

The DRC criterion is used in this paper for ranking industries according to their comparative advantage compared to the rest of the world. We define the country's comparative advantage in industry j if the following condition holds,

$$d_j < s_j \qquad (6)$$

or its equivalent,

$$(d_j/s_j) < 1 \qquad (7)$$

All industries where $d_j < s$ or $(d_j/s_j) < 1$ are considered socially profitable and are ranked from the lowest to highest value of equation (7) indicating the greatest to least comparative advantage among industries.

Equation (3) also uses the concept of labor intensity. The labor intensity of production methods as well as of industries is generally considered favorable to employment expansion. Underlying this view is the belief that industries, in their choice of production methods, are confronted with techniques ranging from high to low proportions of capital to labor. In a situation where the overriding objective is employment generation, the more labor-intensive industries would appear to be more desirable. Choosing which measure of labor intensity to use can be a problem because of the diversity of indicators that are used[7/] and the fact that the ranking of industries by these indicators often will differ. The capital-labor ratio is used as the indicator for labor intensity in this paper because it seems the most appropriate in the face of capital being the current greater development constraint. Despite the known limitations of this measure particularly in cases of substantial variations in capacity utilization across industries quite common among developing countries, the capital-labor ratio does provide a static ranking of industries by their direct labor intensity which suffices for the purpose of a simple ranking of industries by their employment-generation capacity. The capital-labor ratio (k) is defined as the ratio of the stock of investment in fixed capital and in working capital (K) to the flow of labor services (L). This is compared with some cut-off capital-labor ratio, say $\bar{k}$, in

excess of which an industry's k would be considered capital-intensive. Conversely, an industry j is labor-intensive if the following condition holds,

$$k_j < \bar{k} \tag{8}$$

or its equivalent,

$$(k_j/\bar{k}) < 1 \tag{9}$$

All industries where $k_j < \bar{k}$ or $(k_j/\bar{k}) < 1$ are considered labor-intensive and are ranked from the lowest to highest value of equation (9) indicating the highest to lowest labor intensity among industries.

Table 1

MAJOR INDUSTRY GROUPS BY COMPARATIVE ADVANTAGE AND LABOR INTENSITY

Industry Group	(d_j/s)	$(k_j/\bar{k})$	Industry Description
I	<1	<1	competitive, labor-intensive
II	<1	>1	competitive, capital-intensive
III	>1	<1	noncompetitive, labor-intensive
IV	>1	>1	noncompetitive, capital-intensive

III. Philippine Comparative Advantage in Labor-Intensive Manufactures

Using framework discussed in section II above, four major industry groupings emerge into which Philippine manufacturing industries are classified: Group I, the competitive, labor-intensive industries where (d_j/s) is less than 1 and $(k_j/\bar{k})$ is less than 1; Group II, the competitive, capital-intensive industries whre (d_j/s) is less than 1 and $(k_j/\bar{k})$ is greater than 1; Group III, the noncompetitive, labor-intensive industries where (d_j/s) is greater than 1 and $(k_j/\bar{k})$ is less than 1; and Group IV, the noncompetitive, capital-intensive industries where (d_j/s) is greater than 1 and $(k_j/\bar{k})$ is greater than 1. These are shown in Table 1. Industries with (d_j/s) ratios less than 1 are those in which the country has comparative advantage and are termed competitive industries. The domestic resource cost per dollar saved (if it is an import substituting industry) or per dollar earned (if it is an export industry), the DRC for these industry, is less than the SER which is the opportunity cost of the dollar saved or earned. These are either labor-intensive or capital-intensive. Conversely, industries are noncompetitive if their (d_j/s) ratios are greater than 1, meaning the domestic resource cost per dollar saved by import substitution or earned by exporting, the DRC for these industries, is greater than SER. Again, these are either labor-intensive or capital-intensive. Estimates of the average and labor intensity for the four groups are shown in Table 2.

It would seem from Table 2 that the country's greatest comparative advantage in manufacturing is in industry group I. This group, competitive, labor-intensive manufactures, has the lowest (d_j/s) ratio

Table 2

AVERAGE (d_j/s) AND ($k_j/\bar{k}$) BY MAJOR INDUSTRY GROUP

	Industry Group	(d_j/s)	$(k_j/\bar{k})$
I	Competitive, labor-intensive	.68	.45
II	Competitive, capital-intensive	.83	7.16
III	Noncompetitive, labor-intensive	1.10	.42
IV	Noncompetitive, capital-intensive	1.32	4.43

Sources: The values of d_j are based on the DRC estimates for 1974 by R.M. Bautista and G.R. Tecson in R.M. Bautista, J.H. Power and Associates /5/. The value of s is the SER estimate by E. Medalla, op. cit., the value of k_j are derived from the estimates of the replacement value of capital and data on industrial employment from the NCSO Annual Survey of Manufacturing used as basic data for the DRC estimates; the cut-off value for labor-intensity $\bar{k}$ is ₱30,000[8/].

indicating, on the average, more than 30% cheaper costs than the shadow exchange rate s. This is significantly lower than the average of .83 for industry group II, competitive, captial-intensive manufactures. These findings appear consistent with the theory that countries with relatively abundant labor as natural resource would likely find their comparative advantage in labor-intensive industries. This has imporant implications on the magnitude of costs that would be saved in reallocating resources more towards this group. Among the noncompetitive industry groups II and III, the ratios are 10 per cent and 20 per cent, respectively, higher than the shadow exchange rate s. It is also significant that even among the noncompetitive groups, labor-intensive industries have the cost advantage over the capital-intensive ones. From these results, it would seem that even a shift from the capital-intensive industries of group IV to the labor-intensive industries of group III would further lower costs in manufacturing.

Another positive factor can be said in addition to the cost savings concomitant to resource allocation towards industry group I. Being the competitive, labor-intensive group where the (d_j/s) ratios are lowest and less than 1, industry group I includes the more comparatively advantageous production activities for the country, where production costs are likely to be lowest and therefore are likely to be competitive in the world export markets. The expansion of exports of these industries, in turn, would likely yield a positive effect on the country's economic growth. Higher rates of growth accompanying the growth of exports are commonly traced to some longer-run factors

such as the ability to take advantage of economies of scale and to produce within factories or plants of appropriate size, and the stimuli to increase efficiency in the midst of competition in foreign markets, and like factors.

Apart from implying substantial savings in domestic resources and faster economic growth that comes with greater ability to compete and grow in foreign markets, the promotion of industry group I would yield the prospect of substantially generating employment opportunities for the large pool of unemployed workers in the country. The labor-intensive character of production in these industries is by itself a reason to encourage their expansion. The faster the growth of these industries relative to the capital-intensive ones, the faster would be the shift upward of the demand curve for labor. Moreover, if some measure of success is achieved in shifting from the capital-intensive methods of the competitive industries of group II to more labor-intensive methods, this would also enhance the employment-creation capacity of the manufacturing sector. Perhaps, most important for employment expansion is the likelihood of greater export orientation of Group I industries because of their lower production costs. As mentioned earlier, greater export orientation of an industry is likely to be effective in accelerating the rate of economic growth. Again, this would, ceteris paribus, result in a higher rate of upward shift in the demand curve for labor and would, therefore, result in even more workers employed.

Let us now turn to whether or not Philippine comparative advantage in labor-intensive manufactures is reflected in the product-

ion and export performance of these industries. Table 3 shows the ratios of exports of the four industry groups to total manufacturing valueadded as well as their shares in total manufacturing value added. It appears that group I, the competitive, labor-intensive industries where the greatest comparative advantage of the country lies, produced 23 percent of manufacturing value added, less than the 45 per cent contribution of group II, the competitive, capital-intensive industries, and even less than 30 percent contribution of group IV. Understandably, competitive groups I and II account for a noticeably greater part of total value added, approximately 70 per cent, than the share of non-competitive groups III and IV. Among the competitive groups, the capital-intensive industries predominate over the labor-intensive ones. The situation is the same among the noncompetitive groups where the contribution of labor-intensive industries is insignificant relative to that of capital-intensive manufactures. The more significant observation that can be made from the figures in column 1 is the overwhelming contribution of capital-intensive industries which is three-fourths of total manufacturing value added. This seems contrary to the hypothesis made in section II that the country's production structure would favor the labor-intensive industries.

From the viewpoint of export performance, the country's comparative advantage in group 1 industries is hardly confirmed by the very low share of exports in total value added shown in column 2 of the same table. The ratios are much higher for groups II and IV indicating the much greater contribution of exports of capital-intensive manufactures. Groups I and II appear to outperform groups II and IV

Table 3

VALUE ADDED AND EXPORT SHARES IN MANUFACTURING

	Industry Group	Share in value added	Export share in value added
I	Competitive, labor-intensive	.230	.011
II	Competitive, capital-intensive	.450	.032
III	Noncompetitive, labor-intensive	.010	.003
IV	Noncompetitive, capital-intensive	.300	.024
	All Manufacturing	1.000	.070

Source of Basic Data: Input-Output Table of the Philippines, 1974.

because of their greater competitiveness. However, in both the competitive and noncompetitive groups, the capital-intensive industries export more than the labor-intensive industries. Finally, in relation to the hypothesis made in section II above, it seems that the country instead of exporting more labor-intensive manufactures actually export more capital-intensive ones.

A most disturbing conclusion, then, emerges from these relationships brought out in Table 3. The industries which are indiciated to be the most efficient in utilizing domestic resources, the industries wherein lie the country's greatest comparative advantage, and where the greatest capacity for generating employment because of their relative labor intensity, appear to lose out to the less efficient, less comparatively advantageous and less employment-generating industries. Their contribution to manufacturing value-added as well as their export share in output are significantly smaller compared to the capital-intensive groups. Its disappointing record is exceeded only by the even greater inefficiency and worse performance of group III, the noncompetitive, labor-intensive industries. That the magnitude of costs involved in terms of misallocated resources and foregone economic growth and employment could be substantial is indicated by the 3:1 proportion of the less efficient, capital-intensive and less income generating industries to the competitive, labor-intensive group. Group I industries are listed in Table 4 with their indicators for domestic resource cost d_j, and labor intensity k_j. These number 11 in all and collectively have the lowest DRCs and the lowest K/L ratios, and therefore, are the most efficient and most labor-intensive industries in the entire manufacturing sector.

Table 4

DRC AND K/L: COMPETITIVE, LABOR-INTENSIVE INDUSTRIES

Code	INDUSTRY	DRC	K/L
151	Measuring, controlling scientific equipment	4.31	14.0
152	Medical Orthopedic & surgical supplies	4.39	14.0
57	Dessicated coconut products	4.69	18.5
86	Furniture & fixtures	5.77	7.6
131	General Industry machinery & equipment	5.98	24.8
70	Cigars, chewing & smoking tobacco	6.15	22.3
96	Leather products except footwear apparel	6.25	11.0
81	Other made up textile goods	6.45	4.14
77	Footwear except rubber & plastic	6.47	9.1
157	Miscellaneous manufactures, nec	6.75	4.2
92	Books & pamphlets	8.17	15.2

Sources: The DRC estimates are by R.M. Bautista and G.R. Tecson in R.M. Bautista and J.H. Power and Associates [5]; values of K/L are derived from the estimates of the replacement value of capital and data on industrial employment from NCSO Annual Survey of Manufacturing used as basic data for the DRC estimates.

IV. Market Distortions and Effective Protection Rates

The key to the failure of the country's manufacturing sector to be a leading source of economic growth and employment, as discussed in the preceding two sections of the paper, is the failure of the economy to produce and export in conformity to its comparative advantage in low-cost competitive labor-intensive industries under efficient resource allocation conditions. What could explain the divergence of the observed factor content of production and exports from what would be expected to arise under an efficient resource allocation? We hypothesize that the protection and incentives system in the country introduces "market distortions" which so distort the real market structure of industrial costs and prices that the comparatively inefficient and capital-intensive industries are the ones that are made privately attractive to investors and manufacturers. The theory of effective protection[8/] predicts an allocative effect by the structure of protection or incentives on the country's resources. The resource pulls created by the protection system posits a certain pattern of resource allocation among industries in the domestic market. It predicts the movement of resources from the less protected industries to the more protected ones through the structure of prices and profits yielded by the system. By causing prices and rates of profits to increase more in certain industries than in others, protection induces production factors and resources to shift to the more profitable protected industries where rewards to resources are higher and away from the less protected and less profitable industries which can only afford to pay lower prices to resources. If this is so, then the observed

structure of manufacturing production described in section III above may be explained by the resource pulls and pushes induced by the protection and incentives system. As a background for understanding the nature of these "market distortions," a brief summary of protection and incentives policy in the country is given below.

A. Protection and Incentives Policy in the Philippines Since 1950

Use of Foreign Exchange Controls and Multiple Exchange Rates Up to 1960

Protection Policy in the Philippines may be said to have started by the end of 1949 when in response to a balance of payments crisis, import and exchange controls were imposed. The deficit in the country's trade balance mounted as a result of the huge expenditures on imports for reconstruction and rehabilitation after the war as well as large imports on food and consumer goods. At the same time, export earnings was slow to recover and provided little offset to the continuing trade deficits. The policy response to this crisis was to ration foreign exchange. This was implemented in a manner that allocated more foreign exchange to the importation of essential goods such as capital and intermediate goods than to the less essential finished consumer goods. Controls, then, was intended to solve a balance of payments problem but provided at the same time protection for the domestic manufacture of consumer goods.

Import control was instituted through the creation of an import control board which had the authority to restrict the importation of luxury and inessential items. Initially, import control was intended to run for only a year, but eventually it took on a more

permanent nature with the passage in 1950 of a new law which established the Import Control Administration. This time the intention to protect local industries was evident as the law provided greater percentage reduction in imports if there appeared to be sufficient domestic supply of a commodity.

The Import Control Administration was later replaced in 1951 by the Import Control Commission which continued the function of import control until 1953 when the Central Bank took over this function through its control of foreign exchange. The Central Bank administered exchange controls such that imports of non-essentials were restricted and preference was given to the importation of producer goods. This meant the elimination of any significant foreign competition in domestic non-essential industries which made these industries very much protected in the domestic market. Moreover, a system of multiple exchange rates provided additional protection to industries considered "new and necessary." This resulted from the exemption of these industries from the 17 per cent tax on the sale of foreign exchange in 1951. This tax was enforced until 1954 when it was replaced by a special tax on imports. This tax on imports was waived for the machinery and raw materials importation by the "new and necessary" industries and was periodically reduced until its complete elimination in 1965. In 1959 too, the Central Bank was given the authority to charge a 25 per cent fee on the sale of foreign exchange. Again, the "new and necessary" industries were exempted from this fee which further enhanced their status as compared to other industries. This rate was reduced gradually until its complete phase out by 1962.

Exchange controls and the multiple exchange rate system were abolished with a change in administration in 1962 in response to their growing notoriety as a source of graft and corruption. Moreover, it was increasingly apparent that after a decade of exchange controls there was little room for further favoring producer and capital goods considered as essential imports relative to the inessential consumer items. At least 85 per cent of total imports by 1962 consisted of "producer goods" and the rest were also essential in the maintenance and expansion of output and employment in the existing industries. The exchange rate, however, was not completely unified until in November 1965 when the requirements to surrender 20 per cent of export earnings at the lower than the free market exchange rate was removed and the peso was devalued officially.

Thus, the system of import licensing and exchange control was liberalized and full decontrol was achieved by mid-1960's. By 1965 the main source of protection to domestic industries was the high tariffs which were strengthened by discriminatory sales taxes as well as tax exemptions to so-called "new and necessary industries." Between 1967 and 1970 saw the reestablishment of moderate exchange controls as a result of the rapidly worsening balance of payments situation brought about by substantial expansion of domestic credit and government investment expenditures. These were in the form of tighter controls of credit to importers particularly of less essential goods. In February 1970 with the deficit in the balance of payments again reaching crisis proportion, the government decided to put the peso under a floating exchange rate system in which

exchange controls were gradually removed. Initially, a system of multiple exchange rates providing for lower peso conversion rates for exporters was adopted but was later replaced by a special export tax to exporters. Even as the peso has been allowed to depreciate since 1972, import licensing has been reinstituted for some items. This results from a provision of the Tariff and Customs Code of 1978 which grants the President authority, among others, to impose quota or surcharges, and ban imports for specific purposes. Also, the Central Bank has been charged with the responsibility to regulate the importation of certain commodities. In particular import ceilings are set for items classified as nonessential and unclassified commodities. By early 1983, however, more stringent import and exchange controls once again appeared necessary in the face of the rapid deterioration of the balance of payments resulting from a combination of economic and political factors.

Increasing Use of Tariffs

Tariffs as a protection instrument became established only in 1957 with the passage of Republic Act No. 1937 known as the "Tariff and Customs Code of the Philippines." Before this, tariffs as provided for in the Philippines Tariff Act of 1909 which was enacted by the United States Congress before Philippine independence, was intended to serve primarily the purpose of raising government revenue. However, Philippine government revenues from tariffs were eroded by the preferential free trade with the United States which was the country's predominant trading partner. The clamor for the removal of this preferential trade culminated in the Laurel-Langley

Agreement which provided for the gradual phase out of tariff exemptions for U.S. goods starting in 1956. This led to the enactment in 1957 of the Tariff and Customs Code by the Philippine Congress which clearly added the protection objective to the mainly revenue purpose of the tariff in the pre-war years.

As noted earlier, protection of the manufacturing sector was carried out through a system of foreign exchange controls and multiple exchange rates between 1949 and the mid-1960's. With the virtual dismantling of this system by 1966, however, the tariff became the main instrument of protection. This tariff structure exhibited a protective bias in favor of consumer goods relative to intermediate and capital goods similar to that provided by the system of exchange controls. It appears that the same pattern of industrial structure and resource allocation that the system of exchange controls encouraged was perpetuated by the tariff system that replaced it. This structure became even more pronounced by 1965 when in response to pressures to offset the elimination of controls, some upward adjustments in the tariff rates were made. Tariff rates were relatively high by 1965, estimated to average 70 per cent for consumer goods, 55 per cent for inputs into construction, 21 per cent for intermediate goods and 16 per cent for capital goods. Thus, the structure of protection remained virtually unchanged between the 1950's and 1960's although the instruments of protection changed from import and exchange controls to tariff.

Modifications to the Tariff Code in 1973 and 1981

Between 1965 and 1973 there have been minor changes in the tariff system. A major revision of the tariff law was implemented on January 1, 1973 with the primary objective of simplifying the tariff rates to a six-level schedule in order to improve the administration of customs. The amended Tariff Code of 1973 also provided for special duties to protect Philippine industries against unfair competition such as dumping, subsidy and subvention. Furthermore, it added a provision on the imposition of an additional duty of 10 percent on products of any country which discriminated against Philippine products.

An important modification was the imposition of export duties which became a permanent feature of the Tariff Code. The present schedule of rates for export duties as amended by subsequent legislation consists of a basic rate and a flexible rate called the premium duty. The export tariffs fall on the traditional agricultural and mining export sectors of the country. An export tariff of 4 per cent is applied on most of these commodities with the exception of logs, with an export tariff of 20 per cent, copra with 7 1/2 per cent and centrifugal sugar with 6 per cent. The flexible rate or the premium duty is applied on a fewer number of industries with the maximum of 30 per cent imposed on copra and 20 per cent on all the rest. The objective of export taxation is to induce the processing of these traditional export products and give an advantage to and encourage the export of manufactured and semi-manufactured goods as a whole. The higher tariffs for logs,

sugars and centrifugal sugar reflect the policy of phasing out the export of these commodities in their unprocessed forms and promoting their export in more processed forms.

Since 1973 and prior to 1981, there have been some tariff changes embodied in the Tariff and Customs Code of 1978 and subsequent amendments. The new Code provided for the same six levels of advalorem rates, namely, 10, 20, 30, 50, 70 and 100. While there are no duty - free rates, some articles may be imported duty-free under certain conditions as specified in the Code. This was later amended in 1979 to include other tariff rates not exceeding 100 per cent ad valorem. In the main, the Tariff changes between 1973 and 1981 consisted of downward revisions in the tariff rates as well as tariff reclassification of specified commodities aimed primarily at easing the supply and bringing down the prices of essential food and consumer items. The collective effect of these, however, did not substantially change the structure that consistently characterized the Philippine Tariff and Customs Code since its inception in 1957.

A major revision of the Tariff Code was implemented effective January 1, 1981. This resulted from a policy decision to effect a major reform of the protection system in the country aimed at improving the competitiveness of domestic industries and promoting better allocation of resources in relatively efficient export and import-substituting industries. The removal of the long-standing biases in the protection structure against exports, against backward integration of industries and against the more efficient users of

resources was recognized as important prerequisite to the improvement of the country's balance of payments and the overall efficiency in the manufacturing sector.

A maximum duty of 50 per cent and a minimum rate of 10 per cent with few exceptions are set. This narrows down the range of Tariffs substantially from the previous maximum rate of 100 per cent while maintaining the base rate of 10 per cent. The maximum 50 per cent tariff rate provides some allowance for adjustment to industries which for more than two decades have existed under a regime of protection, but still represents a sharp reduction of protection for these industries.

Tariff rates are reduced as well as evened out across-the-board within specified industrial or product categories. The classification of industrial or product categories is based on the degree of processing involved, i.e. raw materials, intermediate goods, and finished goods. For raw materials the outputs of which are either insufficient to meet local demand or not domestically produced at all, the tariff rate ranges from 5 to 10 per cent. The lower rate of 5 per cent is given as a temporary concession in the first or second year of the program implementation period. For raw materials domestically produced in sufficient quantities to meet local demand, the range of 20-30 per cent is applied.

Intermediate goods receive a 20-30 per cent tariff. Finished goods consist of two categories: Capital equipment and producer goods, and consumer goods. On the first is applied a range of 20-30 per cent which is the same as that on intermediate goods.

price, and a higher range of 100 to 200 per cent on imported cars. Imports for direct personal use are charged a compensating tax equal to the sales tax rate. The specific tax is in terms of a specific amount collected on goods per unit quantity or amount sold whether produced locally or imported. The specific taxes on imported goods are higher than the specific taxes on domestically-produced products. The product coverage of specific taxes is very limited and indirect taxation is mainly in the form of advalorem sales taxes.

Indirect taxes in the form of sales taxes and specific taxes, are a source of protection to domestic manufacturing because of the discriminatory treatment of imports as compared to domestic produce. For products subject to sales taxes, the discrimination is in terms of adding a mark-up on the transaction value of the product, which is then used as the base of the tax while, domestic produce is taxed without the mark-up. The rate of mark-up progresses with the degree of inessentiality. For some products, this discrimination is increased by the higher rates of the sales tax on imports relative to the domestic produce. A further advantage to the latter is provided in terms of a lower base for domestic produce as a result of allowing the application of the sales tax rate not on the total transaction value but only on the remaining value after deducting the material inputs on which percentage tax payments were previously paid. This was modified in 1978 by granting tax credits equal to indirect taxes paid on inputs. For products subject to specific taxes, the discrimination is in terms of the higher specific taxes on imports than on domestic produce. The structure of indirect taxes have changed very little since the post-war period. Some

consumer goods get the maximum range of 40-50 per cent. A movement toward greater uniformity in tariffs is apparent as the 20-30 per cent rate is applied on certain categories of raw materials, on intermediate goods and finished goods in the form of capital equipment and producer goods. The unifying effect of the application of the 20-30 per cent range on broad economic categories irrespective of the degree of processing is one of the more significant features of the tariff reform. This revised schedule of tariffs minimizes but does not remove the cascading structure of tariffs such that inputs, in general, continue to receive lower protection than final products.

Thus, the tariff reform program is staged over a five-year period beginning on January 1, 1981 and reduces the previous maximum rates of 70-100 per cent to 50 per cent covering largely inessential items. In addition, a generally reduced tariff is applied on the other categories, ranging from a minimum of 5-10 per cent to 50 per cent. The range of tariff rates being limited to 10 percentage point within each category, leads towards a closer uniformity of tariff rates. All these have the overall effect of lowering tariff protection for the non-essentials relative to other items and reducing substantially the dispersion of rates across industries. With the tariff reform, the average tariff rate falls from 43 per cent to 28 per cent. The possibility that infant-industry reasons exist for some of the industries is allowed for by staging or gradually lowering the tariff through a period of five years in two to five stages. For the peak rate industries, the staging period spanned a two-year period, from January 1, 1981

on January, 1982 to bring the 100 per cent duty to 50 per cent. The 70 per cent duty was lowered to 50 per cent on January 1, 1981 and maintained thereafter. For the lower rates, further reduction is staged over a period of five years, from January 1, 1981 to January 1, 1985 or less.

Other Policies

Indirect Taxes

There are two basic types of indirect taxes in the country. One is the sales tax and the other is the excise tax or specific tax. The sales tax is imposed on most products while the specific tax is imposed on a few products, namely tobacco, alcoholic beverages, gasoline and oil. Both the sales tax and the specific tax are imposed on products whether domestically produced or imported. Products are subject to either sales tax or specific tax but not both.

The sales rate varies according to essentiality. Non-essential items are taxed at 25 per cent. The sales tax rate on essential articles is 5 per cent and that on agricultural products is 1 per cent. Moreover, graduated tax rates ranging from 10 to 25 per cent are levied on certain locally produced articles such as watches and clocks, fountain pens and ballpens, electric fans, stoves and ranges, phonographs, radio, television sets, refrigerators, and the like. The imported versions of these articles are subject to higher graduated sales tax rates. Manufactured cars likewise are subject to graduated sales tax rates with lower rates on locally manufactured cars ranging from 10 to 200 per cent depending on the

reduction in the rates and mark-ups were implemented since 1978 but these have not modified the structure significantly.

Tax and Fiscal Incentives

There are various tax and fiscal incentives provided to manufacturing firms in the country. To the extent that these incentives increase producer receipts from domestic output as compared to the free-trade value of imports and exports, these incentives can be considered a subsidy. These constitute a source of protection and must be included in any measure of protection to industries.

The tax and fiscal incentives are granted to firms mainly by virtue of the provisions of two major incentives laws. These are the Investment Incentives Act of 1967 and the Export Incentives Act of 1970. These two laws have been amended in 1973 and 1974 to further liberalize certain incentives provisions. In addition to these two basic laws, there are other laws which grant tax incentives to a number of products in the form of tax exemption from the payment of duties on imported raw materials and capital goods and of compensating sales taxes.

The Investment Incentives Act of 1967 provides for the creation of the Board of Investments (BOI), the agency in charge of administering the Act. This Act was primarily intended to encourage import substituting industries but also encourages expansion of exports. The Act reiterates the constitutional guarantees of freedom from expropriation and requisition except in the interest of national welfare or defense, and only upon payment of just

compensation. All foreign investors are allowed to remit earnings on investments and to repatriate their investments in the currency in which they were originally made. Remittance of foreign exchange to meet payments of interest and principal on foreign loans as well as obligations arising from technological assistance contract is also assured.

The Act provides for the yearly preparation of an Investment Priorities Plan (IPP) wherein are listed the industrial sectors which merit priority consideration for investment and incentives purposes. It grants fiscal and other incentives to firms which register with the BOI under two priority classifications, e.g. "pioneer" and "preferred." Investments which introduce new products or new processes into the country are classified as "pioneer" projects, while investments which are in areas where existing capacity is less than what would meet domestic demand and export demand are classified as "preferred" projects. Enterprises can register for "preferred" status if at least 60 per cent of the voting capital stock as well as of the membership of the Board of Directors are Philippine citizens. Enterprises can register for "pioneer" status with no citizenship constraint.

The incentives that enterprises may avail of under this Act include: (1) accelerated depreciation, (2) net operating loss carry-over, (3) tax deduction for expansion reinvestment, (4) tax exemption on imported capital equipment, (5) tax credit on domestic capital equipment, (6) exemption from all internal revenue taxes except the income tax, (7) post-operative tariff protection,

(8) double deduction from taxable income of promotional expenses, (9) double deduction from taxable income of shipping costs and (10) tax credit equivalent to the sales, compensating and specific taxes on raw materials used in export production for ten years. "Preferred" enterprises may avail of incentives (1) to (5). "Pioneer" enterpries may avail of incentives (1) to (7). BOI-registered enterprises, "preferred" or "pionerr," which export or propose to export are allowed incentives (8) to (10).

The Export Incentives Act of 1970 was aimed at intensifying export activities by increasing the extent and coverage of incentives to export enterprises already provided for in the Investment Incentives Act of 1970. This Act provides for the yearly drawing of an Export Priorities Plan (EPP), which is a list of export products which are to be given priority in terms of incentives depending on their ability to increase foreign exchange earnings, encourage the utilization of excess manufacturing capacities of exports, develop new markets for Philippine products, utilize indigenous raw materials, create employment opportunities and encourage regional dispersal of industries.

Availment of incentives under the Export Incentives Act are granted to Philippine citizens or to corporations and other entities which are at least 60 per cent owned and controlled by Philippine citizens, who are pioneer export producers of products which are classified as pioneer under the Investment Incentives Act of 1967 and which are listed as export products in the EPP. If such products are not listed in the EPP, at least 50 per cent of such products must be exported.

B. Effective Protection

In evaluating protection, the question of which measure to use arises. To measure protection on the basis of the tariff or its equivalent applied on the product price alone would be to ignore the effects of tariffs or their equivalent on the inputs that went into the output. However, tariff systems generally encompass a broad spectrum of products ranging from the primary commodities which undergo little or no processing to the highly processed group of manufactures. Products, considered either as outputs or as inputs, are subject to tariff and other trade restrictions. Nominal protection, or protection of the product price alone, therefore, would not adequately capture the joint effects of tariffs and similar instruments on both the outputs and inputs of a processing activity. From this need has evolved the effective rate of protection (EPR) measure which seeks to show the effects of the structure of nominal tariffs on the production process through the effects on the value added rather than on the product price of the protected industry. The EPR represents the proportionate increase in domestic value added per unit of output over free trade value added per unit of output as a result of protection.

The EPR may be estimated, if free-trade coefficients are available, by the following equation:

$$e_j = \frac{v'_j - v_j}{v_j} = \frac{v'_j}{v_j} - 1 \qquad (10)$$

e_j is the effective protection rate; v'_j is the domestic value added per unit j, and v_j is the free trade value added per unit j. Also, let

$$v_j = p_j (1 - \Sigma_i a_{ij}) \quad (11)$$

$$v'_j = p_j (1 + t_j) - p_j \Sigma_i a_{ij} (1 + t_i) \quad (12)$$

where p_j and a_{ij} are the free trade price of j and the value of material input i per unit output j, respectively, and t_j and t_i refer to the proportions by which domestic market prices of the output and input, respectively exceed world market prices due to tariffs and other protective instruments. Then, substituting equations (11) and (12) in equation (10)

$$e_j = \frac{t_j - \Sigma_i a_{ij} t_i}{1 - \Sigma_i a_{ij}} \quad (13)$$

The EPR is interpreted here as a measure of the effective price (which is the value added) that the market guarantees the private producers as a result of protection.

Structure of Protection Before 1981

Variation in Sectoral Protection Rates

Estimates for the Philippines in 1974 show that the nominal rates and the effective protection rates of EPRs differ substantially

among sectors. The EPRs, however, are more dispersed around their mean than are the nominal rates as shown by the coefficients of variation of 203.1 per cent for the effective rates compared with the 99.7 per cent for the nominal rates.

The nominal rates of protection derived from the tariff and indirect tax rates yielded a supply weighted mean of 44.8 per cent. On the whole, the nominal rates of protection exhibit characteristics widely ascribed to most tariff structures such as the "cascading" of tariff rates, meaning zero or low rates are identified with raw materials and fuels, higher rates with semi-manufactures and highest rates with finished products. In general, intermediate products and semi-manufactures including semi-processed food and industrial materials and equipment fall within 20-70 per cent range while finished products and manufactures recorded much higher rates. Nominal rates on the basis of tariff rates alone are generally lower than those based on both tariffs and indirect taxes. Protection of industries, while mainly resulting from tariff protection, appears to be markedly strengthened by domestic indirect taxes.

EPRs of Major Industry Groups

In general, the primary and agricultural sectors have EPRs much lower than the manufacturing sectors which indicate the protective bias for the domestic processing industries. Export-oriented industries[10/] have mostly negative EPRs implying a bias against exports in the protection structure. This can be traced to the imposition of the

export tax on a number of agricultural and mineral exports as well as to the tariffs and taxes on the inputs of these commodities in combination with zero tariffs and taxes on exports.[11/] These results are summarized in Table 5.

Under the drawback system being implemented, all tariff and tax payments on inputs into exports are returned to the exporter in the form of tax credits. This tends to give exports zero protection except for those export commodities subject to export taxes in which case drawbacks serve to reduce the penalty from input taxation. Board of Investments (BOI)-registered firms, however, get zero protection for their exports since tariff and tax payments are given back in the form of tax credits and are also exempted from the payment of export taxes.

Relatively higher effective protection would seem to characterize the import-noncompeting[12/] industries for which a weighted average of 148 per cent is estimated. If this estimate represents non-redundant protection, it would indicate a highly protected group of industries with very little competition from imports which are kept at low levels by protection. For the import competing industries, the average EPR is 37 per cent, much lower than the 143 per cent average derived for the import-noncompeting group. This would seem to suggest a correlation between an industry's level of protection and the proportion of the domestic market locally supplied. Where effective protection is less adverse to imports, it would seem plausible for imports to gain a bigger share of the domestic market

Table 5

AVERAGE EFFECTIVE PROTECTION RATES ACCORDING TO MAJOR INDUSTRY GROUP
(In per cent)

Industry Group	EPR
Agriculture and Primary	9
Manufacturing	44
Exports	4
Nonexportable	61
Import, competing	37
Import, noncompeting	148
Overall Average	36

Source: Norma A. Tan, "The Structure of Protection and Resource Flows in the Philippines," Unpublished Ph.D. dissertation (School of Economics, University of the Philippines, March 1979).

while they encourage cost reduction in the home industries through competition.

On the average, the EPR estimates are significantly higher than the nominal rates, implying that the wrighted average of the tariffs and their equivalent on the inputs must be less than the weighted average of the tariffs and their equivalent on the products. A close similarity is observed in the ranking of industries by the nominal rates and by the EPRs. In general, the effect of differential tariffs on inputs and on outputs is to exaggerate the range of protection given to industries.

In terms of discrimination according to the level of processing, however, effective protection in 1974 hardly deviates from the pattern observed in 1965. Consumption goods receive very high EPRs. Intermediate goods receive substantially lower protection. Capital goods and inputs into construction receive the lowest rates. Estimates for these industry groups are shown in Table 6.

Three elements of bias are, therefore, apparent from the structure of effective protection. First, the bias in favor of manufacturing over the other sectors; second, the penalty given to exports, both within manufacturing as well as in nonmanufacturing industries; and third, the bias in favor of the finishing stages of producing consumption goods over intermediate goods, and especially, over capital goods.

Table 6

AVERAGE EFFECTIVE PROTECTION RATES ACCORDING TO END USE
(In per cent)

Industry Group	1965[a]	1974[b]
Consumption goods	70	77
Intermediate goods	27	23
Inputs into construction	55	16
Capital goods	16	18
Total manufacturing	51	49

[a] Estimates in J. Power and C. Sicat, The Philippines: Industrialization and Trade Policies (London, New York and Kuala Lumpur: Oxford University Press, 1971).

[b] Estimates from N.A. Tan, op. cit.

Subsidy Effects of BOI Incentives on EPRs

In addition to tariffs and indirect taxes, the incentives available to firms registered with the Board of Investment (BOI) under R.A. 5186 and R.A. 6135 constitute another source of protection in view of the number and magnitude of these incentives availed of by firms in recent years.[13/] Incorporating the BOI subsidies into the EPR measure provides a second set of EPRs covering a smaller number of industries for which subsidy rates could be estimated. These are shown in Table 7.

Compared to tariffs and indirect taxes, BOI subsidies appear to be a minor source of protection to domestic industries. Estimated on an industry basis, benefits to export in terms of BOI subsidies as reported by recipient firms are too minimal to offset the general penalty on exports that the system of protection imposes. However, the subsidies could be substantial for particular firms and could significantly increase their level of protection. In general, the overall relative incentive effect of the combined tariff-indirect tax-BOI subsidies to industries largely reflect the incentive effects of tariffs which dominate the effects of the indirect taxes and tax subsidies. The estimated effect of BOI subsidies on industries is a slight improvement in the EPR.

The Structure of Protection After 1981

Tariff Reform for Industrial Development

The above findings confirm the misgivings on the appropriateness of this structure of economic incentives which has prevailed for

Table 7

IMPLICIT TARIFFS AND EFFECTIVE RATES, AS AFFECTED BY BOI SUBSIDIES, CLASSIFIED BY PRODUCTS OF BOI-REGISTERED FIRMS, 1974
(In per cent)

I-O Sector	Product	Effective rate Without Subsidies	Effective rate With Subsidies
	Agro-based		
3	Fruit production	-6.0	-6.0
39	Livestock production	128.0	128.0
25	Marine products	116.0	116.0
59	Cassava starch, cornstarch	650.0	676.0
103	Coconut oil	-5.0	2.0
57	Processed coconut products and byproducts	-10.0	-10.0
40, 41, 45, 46, 48, 52, 54, 56	Processed food and beverage products	445.0	449.0
16	Ramie	8.0	154.0
74, 75	Fiber products	14.0	19.0
83, 82, 84, 86	Wood and wood products	10.0	14.0
87	Pulp and paper; pulp of straw and abaca	38.0	46.0
85	Handicrafts	0.0	0.0

Table 7
Continued...

I-O Sector	Product	Effective Rates: Without Subsidies	With Subsidies
	Mining and Mineral Processing		
32	Iron ore	-10.0	-10.0
33	Copper	-4.0	0.0
35	Nickel, silicate ore	2.0	2.0
121	Primary steel	0.0	11.0
119	Rock aggregate	26.0	27.0
117	Dinnerware) Ceramics, ceramics products)	31.0	34.0
116	Glass products, laminated safety glass	45.0	50.0
	Metal-Based		
129-134	Machinery, equipment and parts	91.0	92.0
120-128	Metal products	28.0	29.0
136-138	Electrical equipment and electrical products	60.0	62.0
	Chemical-Based		
101,111	Industrial chemicals, chemicals and chemical products	0.0	0.0
72	Synthetic fibers) Textiles, textile products)	75.0	84.0
150	Plastic products	198.0	198.0
107	Medicinal and pharmaceutical products	9.0	10.0
79	Garments	-20.0	-22.0

well over two decades in this country. The studies[14] of the system of protection since 1965 yield the implication that the economy's resources have not been efficiently allocated among industries, as the more socially profitable and efficient industries appeared to have been put to a greater disadvantage by protection than the less socially profitable and inefficient ones. These also indicate the overwhelming bias of the protection system in favor of manufacturing over agriculture, the penalty against exports, and the bias in favor of the finishing stages of producing consumption goods over intermediate goods, and especially, over capital goods. This problem, however, is not peculiar to the Philippines. In a study[15] of economic incentives arising mainly from protection, it was shown that in developing countries, the Philippines included, the structure of protection has often actually created biases within the range of industries, which generally are against exports and primary sectors of the economy, and in favor of manufacturing for doemstic consumption.

More recent studies[16] indicate the inhibiting effect on productivity that arises from a structure of market incentives heavily influenced by protection. Particularly important is the finding that the relatively more inefficient and high-cost industries are also the more highly protected industries. The inference is that resources may have been misallocated from the more efficient sectors to the less efficient ones through the attraction of profits artificially raised by tariffs.

In view of the above consideration, the institution of some changes in the tariff system was made in 1981. These revisions

mainly consisted of overall reduction and evening out of tariffs and effective protection rates across industries. Details of the tariff reform program have been discussed earlier in the policy section of this paper.

Greater Uniformity of Protection Rates

The structure of protection to industries implied by the tariff reform can be examined on the basis of nominal tariffs and effective rates of protection (ERPs). By aggregating tariff headings or lines and the revised schedule of tariff rates according to the industrial classification of the Input-Output (I-O) Table of the Philippines, the impact of the tariff reform on industrial sectors can be assessed.

Rates of protection were estimated for the 127 tradable sectors of the I-O table. It appears that there remains a substantial variation in both the nominal rates and EPRs across sectors. This, however, represents a more even schedule of rates compared to the schedule estimated for 1974. The coefficient of variation for the EPRs is 176.4 per cent while that for the nominal rates is 83.4 per cent. Both coefficients are lower than the earlier estimates before tariff reform.

Nominal Protection

A lowering of nominal rates for most sectors is apparent. Nominal rates derived from the revised tariff rates in combination with the prevailing indirect tax rates yield a weighted average of 21

per cent. Protection to industries can be expected to continue to continue to result mainly from tariff protection although markedly strengthened by indirect taxes. The protection to industries from indirect taxes arises from the fact that the country's tax structure taxes imports more than it does the domestically produced output of an industry. The tax rates, applied on sectoral imports are greater than the tax rates applied on their domestic counterparts by some percentage mark-up of the basic tax rate. This is also true for the ad valorem equivalents of specific taxes applied on a number of sectors.

In general, the tariff reform does not significantly change the "cascading" structure of tariff rates. Low rates continue to be associated with raw materials, higher rates with semi-processed products, and highest rates with finished products. This is shown in Table 8 which gives the average nominal rates for industrial categories according to the degree of processing and end use.

The nominal rates, determined largely by the tariff rates continue to be highest for consumer luxury and inessential items. These are substantially lower than the previous rates because of the reduction of the peak rates from 100-70 per cent to the maximum 50 per cent. However, the effect of indirect taxes brings the nominal rates for luxury and inessentials higher than 50 per cent, notably distilled, rectified and blended liquors, cigarettes, wines, motor vehicles and jewelry.

Table 8

AVERAGE EFFECTIVE PROTECTION RATES ACCORDING TO END USE
(In per cent)

Industry Group	Nominal	EPR	
	Post tariff reform	1974	Post tariff reform
Consumption goods	40	77	42
Intermediate goods	22	23	33
Inputs into construction	27	16	31
Capital goods	28	18	25
Total manufacturing	29	44	36

Source: Estimates for 1974 from M. A. Tan, op. cit.; post tariff reform estimates from Table 2.7 in M. A. Tan in C. Findlay and R. Garnaut, (eds.), The Political Economy of Manufacturing Protection: Experiences of ASEAN and Australia (Sydney: Allen and Unwin, 1986).

Effective Rates of Protection

Taking the combined effects of tariffs and indirect taxes on both the final product and inputs into the final product, yield the effective rates of protection on these sectors. The EPR estimates on the basis of the reviesed tariff rates and existing rates of indirect taxes give an average of 28 per cent. This is higher than the average of 21 per cent for the nominal rates. The implication remains that, in general, the weighted average of the tariffs on the inputs must be less than the weighted average of the tariffs on the products. This appears to be consistent with the cascading structure of nominal tariffs. In general, the effect of differential tariffs on input sectors and on output sectors is to strengthen the degree of protection given to industries. The general restructuring of the nominal rates due to the tariff reform reduces the level of overall protection to 28 per cent for all industries. The EPRs of individual industries, however, still vary across sectors, although a marked narrowing of dispersion across sectors is apparent.

EPR Structure of Industry Groups

The primary and agricultural industry group continues to receive very low protection (Table 9). In contrast, manufacturing as a group continues to be more protected. Its EPR, though lower than it was for 1974, still demonstrates the same overwhelming protective bias for the domestic processing industries. The very high EPRs of manufacturing industries compared to those of agri-

Table 9

AVERAGE PROTECTION RATES ACCORDING TO MAJOR INDUSTRY GROUP
(in per cent)

Industry Group	Nominal		EPR
	Post tariff reform	1974	Post tariff reform
Agriculture and Primary	4	9	3
Manufacturing	29	44	36
Exports	4	4	12
Nonexportables	36	61	45
Import, competing	35	37	35
Import, noncompeting	37	148	67
Overall Average	21	36	28

Source: Estimates from N. A. Tan, op. cit.

culture indicates the continuance of the policy to encourage the domestic processing in manufacturing sectors of raw materials and agricultural commodities.

Export-oriented sectors, on the whole, remain to be much less protected compared to nonexportables. The tariff reform, however, reduces the relative bias against exports. The low EPR of exports can be traced to the continued imposition of the export tax on a number of agricultural and mineral exports as well as to the tariffs and taxes on the inputs of these commodities in combination with zero tariffs and taxes on exports.

With the same drawback system being implemented, all tariff and tax payments on inputs into exports are returned to the exporter in the form of tax credits. This tends to given export zero protection except for those export commodities subject to export taxes. The drawbacks serve to reduce the penalty resulting from taxes on inputs. Board of Investments (BOI)-registered firms, however, get zero protection for their exports since tariff and tax payments are given back in the form of tax credits and are also exempted from the payment of export taxes.

The nonexport-oriented industry group continues to get an overwhelming though lower advantage in the protection system with this group getting about four times the level of protection of export-oriented sectors. However, the tariff reform means a significantly lower EPR of 45 per cent compared to the 61 per cent it received. This drop in the EPR is chiefly due to the sharp reduction in the EPR of the import-noncompeting industries for

which an average of 67 per cent is derived compared to the previous EPR of 148 per cent. This is expected to encourage efficiency among this previously highly protected group of industries through competition from imports.

For the import-competing industries, the overall level of protection goes down from 37 per cent to 35 per cent after the tariff reform. Compared with the EPR of 148 per cent for the import-non-competing industries, this represents a narrowing of the edge of import-noncompeting industries over import-competing industries from 4 to 1 to 1.9 to 1 ratio. This is expected to realign the overly-protected import-noncompeting industries with the import-competing industries by making it easier for imports in the former group to gain a bigger share of the domestic market while they encourage cost reductions in the home industries through competition.

The reduction in industrial EPRs is seen to be borne mainly by the consumer-goods industries. This industry group receives a much lower level of protection of 42 per cent than the 77 per cent it enjoyed before. The structure of protection remains biased against the capital-goods industry as it continues to receive the least protection.

Thus, the protection structure continues to favor the relatively finished and more processed products as compared to the semi-finished and intermediate goods. It also remains to be particularly biased against agricultural and raw materials and

capital goods. However, the spread of protection levels are more even than before. The leveling effect is attributable to the sharp reduction of protection to consumer goods combined with the significant improvements in the protection to intermediate goods and inputs into construction.

V. Effects of Protection and Incentives on Resource Allocation Within Manufacturing

Ideally, a country's incentives system should reflect its priorities in accordance with its development objectives. It would hardly be surprising, however, if in the Philippines as in other developing countries, the ideal is not observed. The existing system of industrial incentives in the country is the result of various incentives measures conceived to serve specific and not necessarily consistent objectives with respect to various interest groups at different points in time over the last three decades of planned development. It may be that each incentive measure has served its intended objective. But it is unlikely that the incentives accumulated over time entirely and unambiguously present a consistent set that is supportive of overall present goals and strategies.

To recapitulate, the empirical results discussed in section III above suggests that although the country's greatest comparative advantage is in labor-intensive manufactures, the country's productive resources have not actually moved towards these relatively efficient and labor-intensive industries. Instead, these have heavily gravitated towards capital-intensive manufacturing industries, a great number of which are very cost inefficient from the social viewpoint. The hypothesis is made in section IV above that the existing system of protection and incentives has introduced "market distortions" which would explain the divergence of the observed factor content of production and exports from what trade theory predicts to happen under conditions of efficient resource allocation, i.e. when the country is

following its comparative advantage. This section discusses how the particular pattern of protection incentives and subsidies (discussed in section IV above) could have distorted the structure of production so that the inefficient, high-cost relatively capital-intensive industries became privately profitable; encouraging their production and drawing resources to them away from the efficient, low-cost labor-intensive industries which could have generated more output and employment for the country.

It is evident in Table 10 that effective protection rates before tariff reform were significantly lower for the competitive industries, i.e. groups I and II than the noncompetitive industries, group III and IV. However, compared to all the other groups, the competitive, labor-intensive industries received very little protection or incentives. There are 11 industries in the group listed in Table 11 among which are the more export-oriented industries discussed in section IV above to be relatively penalized by the protection system. Examples of these are cigars, chewing and smoking tobacco, desiccated coconut products and leather products which received negative protection, mainly due to the export tax imposed on them. Other exportables receiving positive though moderate protection were furniture and fixtures, other made-up textile goods, and miscellaneous manufactures. The other industries in group I were mainly oriented to the domestic market but received generally low protection, in particular, medical and surgical supplies and general industry machinery and equipment. These appear to have contended with a high proportion of imports in total domestic supply with the exception of footwear which were mostly domestically supplied. Thus, with the penalty on exports in terms of export taxes and of taxes an inputs plus the relatively

Table 10

DISTRIBUTION OF EXPORTS AND OUTPUT, EFFECTIVE PROTECTION RATES, BY MAJOR INDUSTRY GROUP

	Industry Group	Share in Output	Share in Exports	EPR (Before tariff reform) (in per cent)	EPR (Post tariff reform) (in per cent)
I	Competitive labor-intensive	.23	.16	2.4	4.4
II	Competitive, capital-intensive	.45	.46	37.3	39.9
III	Noncompetitive, labor-intensive	.01	.02	101.6	34.6
IV	Noncompetitive, capital-intensive	.30	.36	70.6	38.1
	All manufacturing	1.00	1.00	44.4	36.0

Sources: Share in output and share in exports derived from Input-Output Transactions Table of the Philippines, 1974, National Census and Statistics Office;

EPR averages are based on EPR estimates for 1974 and for post tariff reform from M. A. Tan, op. cit.

Table 11

DRC, K/L AND MARKET ORIENTATION: COMPETITIVE, LABOR-INTENSIVE INDUSTRIES

Code	I N D U S T R Y	DRC	K/L	X/O 1974	M/S 1974
151	Measuring, controlling scientific equipment	4.31	14.0	.05	.88
152	Medical Orthopedic & surgical supplies	4.39	14.0	.08	.88
131	General Industry machinery & equipment	5.98	24.8	.03	.88
81	Other made up textile goods	6.45	4.14	.15	.01
77	Footwear except rubber & plastic	6.47	9.1	.07	.00
92	Books and Pamphlets	8.17	15.2	.03	.11
70	Cigars, chewing & smoking tobacco	6.15	22.3	.19	.00
86	Furniture & fixtures	5.77	7.6	.22	.03
96	Leather products except footwear apparel	6.25	11.0	.35	.10
57	Dessicated coconut products	4.69	18.5	.77	.04
157	Miscellaneous manufactures, nec	6.75	4.2	.63	.23

Sources: The DRC estimates are by R.M. Bautista and G.R. Tecson in R.M. Bautista and J.H. Power and Associates /5/; values of K/L are derived from the estimates of the replacement value of capital and data on industrial employment from NCSO Annual Survey of Manufacturing used as basic data for the DRC estimates; values of exports to output ratio (X/O) and of imports to total supply ratio (M/S) are from the Input-Output Transactions Table of the Philippines, 1974, National Census and Statistics Office.

Table 12

SUBSIDY RATES TO BOI-REGISTERED FIRMS, 1974

I-O Sector	Product	Total Subsidies (₱1,000)	Ratio to Sectoral Output (%)	Ratio to Output of Registered Firms (%)	Ratio of Export to Output (%)
	Agro-Based				
3	Fruit Production	9,357	0.9	*	*
39	Livestock production	2,291	0.1	6.4	*
25	Marine products	2,534	0.1	6.7	*
59	Cassava starch cornstarch	2,516	0.8	6.8	*
103	Coconut oil	34,140	0.9	17.1	16.6
57	Processed coconut products & by-products	887	0.2	.3	8.9
40,41	Processed food and beverage				
45,46					
48,52					
54,56					
65,66	products	8,964	0.2	*	*
16	Ramie	9,552	9.8	*	*
74,75	Fiber products	4,766	2.4	*	*
83,82	Wood and wood products	28,177	1.4	76.6	12.7
84,86					
87	Pulp & paper; pulp of straw & abaca	31,895	5.6	23.6	.5
85	Handicrafts	271	.1	*	*
	Mining & Mineral Processing				
33	Iron Ore	1,987	2.5	6.7	26.0
32	Copper	87,137	2.9	6.1	10.9
35	Cold	72	.2	*	*
121	Primary Steel	17,577	6.1	*	8
119	Mercury	371	.5	6.9	*
	Bentonite				
	Marble products				
	Rock aggregate				
117	Dinnerware	2,852	5.4	*	*
116	Glass products, Laminted	12,922	3.8	7.8	.2
	Metal Based				
129-134	Machinery, equipment & parts	1,260	.2	*	*
120-128	Metal products	5,296	.3	*	*
136-138	Electrical equipment & electrical products	18,586	5.4	*	*

Cont'd of Table 12

I-O Sector	Product	Total Subsidies (₱1,000)	Ratio to Sectoral Output (%)	Ratio to Output of Registered Firms	Ratio of Export to Output (%)
	Chemical-Based				
101,111	Industrial chemical, chem. & chemical products	36,748	5.6	30.7	.7
72	Synthetic fibers	23,855	1.6	*	*
76	Textile, textile products	13,645			
	Synthetic bags	44	.1	.9	*
150	Plastic products	402	.1	*	*
107	Medicinal and pharmaceutical products	571	.1	*	*
79	Garments	17,359	4.1	*	*

*Data for sales and exports are not reported.

Source of basic data: Board of Investments.

Table 13

DRC, K/L AND MARKET ORIENTATION: COMPETITIVE, CAPITAL-INTENSIVE INDUSTRIES

Code	I N D U S T R Y	DRC	K/L	X/O 1974	M/S 1974
42	Evaporated condensed milk	1.67	137.0	.06	.40
110	Insecticides, germicides & agricultural chemicals	4.03	95.97	.04	.51
122	Metal cans, boxes & containers	4.78	52.44	.00	.09
132	Office computing & acctg. machines	5.40	-	.01	.88
80	Manufacture of embroidered products	5.74	173.86	.07	.01
129	Agricultural machinery & equipment	5.87	95.77	.00	.65
113	Other products of petroleum & coal	6.12	95.79	.06	.18
107	Medicinal & pharmaceutical preparations	6.33	61.70	.02	.22
100	Composed & liquified gas compressed	6.35	65.29	.00	.70
142	Shipbuilding & repairing	6.45	32.51	.04	.55
126	Fabricated wine products	6.47	88.45	.01	.26
102	Fertilizer & lime	6.98	266.4	.00	.70
146	Motorcycles, bicycles & parts	7.23	-	.01	.69
125	Stamped, coated & engraved metal products	7.26	473.07	.00	.26
50	Corn milling	7.45	42.15	.00	.06
106	Plastic materials	7.51	162.94	.07	.48
39	Slaughting & poultry dressing	8.00	-	.00	.01
62	Prepared feeds for animals & fowls	8.06	105.23	.01	.04
76	Other textile products	8.16	197.14	.01	.36

Cont'd. of Table 13

Code	INDUSTRY	DRC	K/L	X/O 1974	M/S 1974
112	Petroleum refineries	8.96	2943.27	.01	.07
87	Pulp, paper & paperboard manufacturing	9.14	300.65	.08	.28
79	Ready-made clothing	5.13	888.85	.16	.01
135	Communication equipment	5.45	30.15	.13	.58
47	Fish canning	6.33	65.56	.18	.17
73	Knitting mill products	6.92	35.75	.14	.24
117	Pottery China & earthware	8.68	72.23	.10	.08
130	Other special industry machinery & equipment	4.75	33.33	.24	.88
82	Lumber	6.14	33.2	.20	.00
118	Hydraulic cement	7.19	714.55	.21	.01
114	Structural clay products	7.94	117.25	.26	.47
83	Plywood & veneer products	6.48	54.17	.37	.00
103	Coconut oil	3.48	200.66	.72	.00
121	Basic non-ferrous metal industries	5.05	69.43	.46	.52
53	Sugar milling & refining	6.4	289.44	.75	.00
104	Other oils & fats	7.34	298.69	.50	.91

Sources: See Table 13.

low EPRs given these industries (many are intermediate inputs and capital goods with low EPRs noted in section IV above), it is not surprising that group I industries would account for less than one-fourth of manufacturing output and about one-sixth of manufacturing exports. Some upward revisions were made via tariff reform but these were of little effect in changing the very low level of protection estimated to be a low 4.4 per cent still in 1985. Furthermore, as can be seen in Table 12, most of these industries are noticeably excluded from the list of registered firms receiving BOI incentives with the exception of two: furniture and fixtures other textile products and desiccated coconut. Even then, the subsidy effect might not be much if we look at the 6 per cent increase in EPR which was the most that was estimated for the sector with the inclusion of BOI subsidies.

Table 13 gives the list of group II, the competitive capital-intensive industries. These industries have the second lowest DRCs and are the most capital-intensive relative to those of other groups. Quite significant is their general orientation towards the domestic market. The great majority or 24 out of 37 of these industries export less than 10 per cent of their outputs. But producing for export is a significant activity for some 10 industries. Six have export ratios between 10 and 20 per cent. The eight industries which recorded relatively high export-orientation are the country's traditional export industries such as sugar milling and refining, coconut oil, other oils and fats, basic non-ferrous metal industries, plywood and veneer products. The more recent industrial exports here

are structural clay products, other special industry machinery and equipment and hydraulic cement. A large number of these are intermediate inputs and capital goods which are seen in section IV to be subject, generally, to low duties.

The estimated average EPR in 1974 of 37.3 per cent is deceptive because it arises from a mixture of negative EPRs of some traditional exports which were subject to export taxes, and a scale of low to moderate EPRs ranging from 4 to 52 per cent and high EPRs of a few ranging from 92 to 126 per cent. Thus, if the penalty to exports due to the imposition of export taxes to traditional export industries were ignored, the group's EPRs would range from moderate to high. Some of the more protected industries include metal cans, boxes and containers; manufacture of embroidered products; other textile products; motorcycles, bicycles and parts; plastic materials; fertilizers and lime; stamped, coated and engraved metal products; pulp, paper and paperboard; and prepared feeds for animal and fowls. These latter group of industries are geared mainly to supplying the domestic market and export at most 8 per cent of their outputs and most export much less. These compete with imports that are able to enter the domestic market in the face of moderate to high EPRs. Thus, the structure of production is characterized by quite a number of traditional exports, and some new exports in the midst of overwhelmingly domestic market-oriented, moderately protected industries competing with imports. Classified according to end use, these industries are seen to be predominantly intermediate and capital goods shown in section IV above to receive moderate protection relative to the consumer and finished goods.

There is reason to believe, though, that the moderate protection given the importable industries in this group understates the actual protection received by them. From Table 12 it is seen that 24 of these or about two-thirds of the total number received BOI incentives or subsidies. Judging from those industries where data of registered firms were reported, the rates of subsidies were high. For some, the subsidy rates were even higher than those based on tariffs and indirect taxes alone, ranging from 17 to 76 per cent. Counting the effect of BOI subsidies, for some firms the rate of protection could then be as much as 100 per cent or higher. Of course, seen in terms of overall industry protection, these high effective rates to particular firms were diluted by the lower rates of firms which did not avail of these incentives. The high protection rates inclusive of subsidies given to group II industries may very well explain the 45 per cent of manufacturing output it accounted for. Tariff reforms in the early 1930's saw some upward changes in the tariff rates which were estimated to yield a new average of 8.7 per cent in 1935.

Group III, the noncompetitive, labor-intensive industries listed in Table 14 have the third highest DRC and the highest labor intensity as a group. These industries are mainly domestic market-oriented with the exception of preserved fruits and vegetables which export about one-fifth of its output. Mostly finished consumer goods with very high effective protection rates noted in section IV above, these enjoy a sheltered local market because of high protection. Judging from the generally very low ratio of imports to domestic supply of these industries it could be that a lot of this protection

Table 14

DRC, K/L AND MARKET ORIENTATION: NONCOMPETITIVE, LABOR-INTENSIVE INDUSTRIES

Code	I N D U S T R Y	DRC	K/L	X/O 1974	M/S 1974
60	Macaroni, spaghetti & noddle	9.44	6.61	.08	.04
95	Tanning & leather finishing	9.55	23.50	.00	.10
54	Candy & chewing gum products	15.18	3.9	.04	.00
52	Bakery products	15.68	29.9	.02	.00
150	Fabricated plastic products	23.24	17.14	.03	.08
46	Other preserved fruits & vegetables	9.94	.02	.18	.06

Source: See Table 13.

is redundant or unnecessary. Even the relatively low rates for preserved fruits and vegetables and for macaroni, spaghetti and noodles would have to be revised upwards if subsidies are included. These two industries belong to the processed food and beverage products group which are shown in Table 14 to have received subsidies through BOI-registered firms. It is significant that only these two industries which enjoyed subsidies export a significant proportion of their outputs. Consisting of only six industries in all, group III accounts for just 1 per cent of manufacturing value added. The downward revisions of these rates after the tariff reforms yield the much reduced average EPR for the group of 34.6 per cent estimated for 1985 which would be higher if subsidies are included.

Group IV industries, the noncompetitive and capital-intensive industries are listed in Table 15. A largely non-exporting group, only 7 out of the 38 industries have export to output ratios greater than 10 per cent in 1974. These export industries include doors, windows and other millwork; canned fruits and vegetable products; other wood, cane and cork products; cordage, twine and net industries; cocoa and chocolate products; uncanned meat products; seafood products and other electrical industrial machinery and equipment. The rest are oriented to producing for the local market in which these industries face varying degrees of competition from imports. Competition, in terms of the much higher proportion of imported counterparts to total domestic supply, is more pronounced in cutlery, handtools and general hardware; basic industrial chemicals; other rubber and related products; other electrical and industrial machinery and equip-

Table 15

DRC, K/L AND MARKET ORIENTATION: NONCOMPETITIVE CAPITAL-INTENSIVE INDUSTRIES

Code	INDUSTRY	DRC	K/L	X/O 1974	M/S 1974
127	Heating apparatus, lighting, etc.	9.76	48.91	.01	.26
115	Structural concrete products	9.79	55.19	.00	.00
143	Motor vehicles, mfd/assembled	9.82	120.52	.01	.51
144	Motor vehicles, engine bodies & parts	9.82	100.94	.02	.51
98	Tires & inner tubes mfg. & retreading	9.85	190.47	.00	.19
49	Rice milling	9.86	87.46	.00	.06
124	Structural metal products	9.89	51.97	.02	.25
56	Processed coffee	9.97	146.82	.02	.04
101	Basic industrial chemicals	10.06	418.99	.07	.70
90	Misc-converted paper prod., nec	10.22	124.54	.06	.28
109	Soap & other washing and cleaning compounds	10.39	103.92	.01	.04
59	Starch & starch by-products	10.55	64.9	.01	.04
116	Glass & glass products	11.09	129.36	.01	.16
88	Paper products	11.10	45.8	.00	.28
72	Textile mill products	12.15	61.27	.02	.24
120	Basic ferrous metal products	13.06	290.68	.00	.52
123	Cutlery, handtools & gen. hardware	13.74	77.54	.04	.80
105	Paints, varnishes & rel. compound	15.36	115.17	.01	.48
65	Distilled, rectified & blended liquor	15.61	65.65	.01	.04
44	Butter, cheese, and other dairy products	18.13	276.84	.07	.40
69	Cigarettes	18.23	64.92	.01	.00
97	Rubber, footwear	20.36	54.54	.01	.00
64	Misc. food manufactures, n.e.c.	23.97	507.68	.02	.04
128	Other fabricated metal prod.	25.52	473.07	.00	.26

Cont'd. of Table 15

Code	INDUSTRY	DRC	K/L	X/O 1974	M/S 1974
51	Flour milling, cereal & flour blended	26.02	254,27	.00	.06
71	Leaf tobacco processing	26.26	37.51	.00	.00
99	Other rubber & related products	28.41	302.39	.07	.58
108	Cosmetics & toilet preparations	139.08	43.09	.01	.22
141	Other household electrical appliances & wares	12.37	-	.00	.32
140	Refrigeration & air conditioning equipment	14.41	-	.00	.20
134	Other electrical, industrial machinery & equipment	14.55	-	.00	.58
48	Other fish seafood products	9.36	32.71	.10	.17
41	Meat products, uncanned	9.43	57.54	.13	.01
55	Cocoa & chocolate products	10.38	87.09	.12	.04
74	Cordage, twine & net industries	10.18	406.77	.31	.03
85	Other wood, cane & cork products	10.18	34.47	.37	.05
45	Canned fruits & vegetable products	10.33	111.69	.49	.06
84	Doors, windows & other millworks	11.53	49.66	.57	.02

Source: See Table 13.

ment; basic ferrous metal products; assembled motor vehicles; and motor vehicle engines, bodies and parts. Supply is mostly local market-originating for structural concrete products; coffee; soap and cleaning compounds; starch and starch byproducts; liquors; cigarettes, rubber footwear and flour milling. Including the non-exportables which are largely consumer, finished goods receiving very high rates in the EPR scale discussed in section IV above, and a few exportable industries, this group's average EPR comes to 68.3 per cent. However, if the relatively low rates of exportables are excluded, the average EPR for the remaining non-exportables i.e. import substituting industries would yield a higher estimate, not far below the high EPR of import-substituting industries of group III. Moreover, like the capital-intensive industries of group II, this group includes a very large number of industries 28 out of 38, where firms availed of BOI subsidies. This is another reason for believing that the EPR estimate of 68.3 per cent for this group could be understated. Considering the wider industry availment of BOI subsidies of the group, it is likely that the EPR would be much higher for particular firms benefitting from the subsidies. Because of lack of adequate reported data, the subsidy effect on the industry level could not be estimated for all industries. Tariff reform substantially reduced the rates by 1985 but assuming BOI subsidies remaining proportionately the same, the effective rates would still be on the high side for many firms in many of the industries in group IV.

Summing up, the discussions of the preceding paragraphs of this section lead to a number of observations. First, the protection

and incentives system provides excessively high protection rates to the noncompetitive i.e. socially inefficient industries of groups III and IV as compared to the rates received by groups I and II, the comparatively advantageous industries. This is due to the fact that groups I and II are largely export industries which are penalized under the system in terms of export taxes, and positive tariffs and taxes imposed on their inputs. Moreover, the non-exportables or mainly import-substituting industries in groups I and II have relatively lower EPRs, these consisting mainly of intermediate inputs and capital goods which are associated with relatively low nominal rates in the system as noted in section IV. In contrast, groups III and IV, the inefficient groups, are mainly import-substituting industries, producing consumer and finished goods provided with high EPRs in the system.

Second, among the competitive or socially efficient groups, the system discriminates in favor of the capital-intensive industries in two aspects: a) in terms of generally higher EPRs as a result of higher tariffs and indirect taxes, and b) in terms of greater availment of subsidies by BOI-registered firms in these industries.

Third, the discrimination in favor of group II, the competitive, capital-intensive industries arises from the capital-cheapening character of the BOI subsidies as incorporated in the Investments Incentives Act of 1967 and the Exports Incentives Act of 1970. This allowed the capital-intensive industries to receive proportionately more subsidies from the BOI-administered incentives laws.

Fourth, the EPR differential between group II and group III could be narrower than it appears to be on the basis of nominal tariffs and tax rates alone. This is because of the subsidy benefits to the capital-intensive industries of group II which presumably are greater than those availed of by the labor-intensive industries of group III.

Fifth, although group III appears to be more protected than group IV, the latter, because of its greater capital-intensity, might have availed of greater BOI subsidies to compensate for its lower level of protection from tariffs and taxes.

And finally, the competitive, labor-intensive industries of group I are discriminated against by the incentives system in terms of: a) low protection from tariffs and indirect taxes, b) penalty on exports through export taxes and/or tariffs and taxes on inputs into exports, c) lower subsidies relative to those available to the inefficient capital-intensive industries of groups II and IV.

Thus, in effect, we have a system where groups II, III and IV industries are generously protected and subsidized while group I where the country's comparative advantage and greater potential for employment expansion lie, are relatively neglected and penalized. It is therefore, not surprising to note that production and exports are concentrated in the two capital-intensive industries, groups II and IV which together accounts for 75 per cent of manufacturing output and 82 per cent of manufacturing exports. Less than one-fourth and less than one-fifth, of manufacturing output and of manufacturing exports, respectively, are contributed by group I industries. The

estimated EPRs for 1985 after tariff reform shows a significantly reduced level of protection but the structure of relative incentives still penalizing the efficient industries, and the efficient and labor-intensive group still at the lowest rung in the incentives scale.

VI. Concluding Remarks

The empirical results of the study confirm for the Philippines the Hechscher-Ohlin-Samuelson factor proportions theory of trade which predicts that a labor-abundant country (which the Philippines is) has its comparative advantage in labor-intensive industries. However, the country's observed facotr content of production and exports appear to diverge from what the theory predicts under efficient resource allocation conditions i.e. if it is following its comparative advantage. It produces and exports relatively more of capital-intensive manufactures (a great number of which are very cost inefficient from the social viewpoint) rather than of labor-intensive manufactures. The study discusses how the particular pattern of protection, incentives and subsidies, by introducing "market distortions," could have distorted the structure of production so that the comparatively advantageous and more employment-enducing industries were relatively penalized by the incentives and protection system. The study ends with the suggestion that work on incentives reform in the future would have to pay attention to this aspect of inequity in the system in addition to the work that has already been done and remains to be done, to remove the biases against exports and against import substitution in the intermediate and capital goods sectors. The main task is to make sure that we encourage not all exports per se, or more imports substitution to include all intermediate and capital goods per se, but to keep a discriminating eye so that the incentives system promotes only the socially efficient and profitable exports and import substitutes while at the same time giving priority to the

labor-intensity dimension of these industries. Heavily protected or subsidized exports and import substitutes of whatever stages in the production process would have to be revealed for what they are - privately profitable but costly to the economy. The criteria of social efficiency or profitability and employment - generating capacity should be taken seriously in investment promotion policies of the government.

Notes:

1. The concepts of essentiality, industry overcrowding, export and employment promotion have been cited as underlying guidelines for industrial protection or promotion policies although their use as precise and consistently used operating criteria in industrial promotion is not clear.

2. Recent discussions, for example, on import liberalization, economic stabilization and recovery, debt rescheduling negotiations and investment incentives have focused on the need to increase output, employment and living standards under conditions of constrained resources.

3. See R.M. Bautista and J.H. Power and Associates, Industrial Promotion Policies in the Philippines, (Metro Manila: PIDS, 1979).

4. The theory of comparative advantage, usually discussed in the economics literature in terms of a 2-product, 2-country trade model, dates back to the works of David Ricardo's Principles of Political Economy and Taxation, as discussed in the Works of David Ricardo, eds., P. Sraffa and M.H. Dobb, Vol. I (1951). This was later formulated as the factor proportions theory in the works of Eli Heckscher, "The Effect of Foreign Trade on the Distribution of Income" in Economish Tidskrift, 31, 1919, reprinted in American Economics Association Readings in the Theory of International Trade, (New York: McGraw-Hill Book Company, 1949); and also formulated by Bertil Ohlin, Interregional and International Trade, (Cambridge: Harvard University Press, 1933; and more recently by Paul A. Samuelson, "International Factor-price Equalization Once Again," Economic Journal, 59, No. 234 (June 1949).

5. See Anne O. Krueger, "Growth, Distortions and Patterns of Trade among Many Countries," Princeton Studies in International Finance No. 40, International Finance Section, Department of Economics, (Princeton University, 1977).

6. The use of DRC for project evaluation has had a long history of application in Israel. The systematic treatment of the measure is relatively recent, mainly in the work of M. Bruno in various publications, notably in M. Bruno, Interdependence, Resource Use and Structural Change in Israel, (Jerusalem: Bank of Israel, 1963) and M. Bruno, "Domestic Resource Costs and Effective Protection: Clarification and Synthesis," Journal of Political Economy, LXXX (January-February, 1972).

7. A review of the different measures of labor intensity is given in A.S. Bhalla, "The Concept and Measurement of Labor Intensity", in A.S. Bhalla (ed.): Technology and Employment in Industry, Geneva: International Labor Office, 1975, and in J. Stern, "The Employment Impact of Industrial Investment: A Preliminary Report", World Bank Staff Working Paper No. 255.

8. This value was commonly used in government project evaluation in 1974. For example, it was considered the upper limit for capital-labor ratios of projects considered by the Development Bank of the Philippines and the Industrial Guarantee and Loan Fund's financing program for small and medium industries. Moreover, P.D. 1123 dated May 31, 1976 defines labor-intensive activities as those with capital-labor ratios of not more than ₱30,000 in capital assets per unit of labor. This value was also used in similar studies as in E. Hife /25/

9. The concept of the effective protection rate has had extensive treatment in the economics literature, themost notable contributors include B. Balassa, C. Barber, G. Basevi, M. Bruno, and M. Corden.

10. By definition, industries which export more than 10 per cent of their production.

11. Because of the aggregative level of the input-output sectors, some activities classified under a sector considered as export-oriented by definition, are import-competing (i.e. industries which import at least 10 per cent of domestic supply) which have positve tariffs and taxes. This resulted in EPRs which are positive for overall export-oriented sectors.

12. By definition, less than 10 per cent of total domestic supply is imported.

13. Apart from BOI subsidies, there are possibly other important subsidies available to firms such as accessibility to low interest and long-term loans. Their inclusion in the EPR measure was not attempted because of the unavailability of consistent data on a sectoral level of aggregation.

14. See J.H. Power, "Import Substitution as Industrialization Strategy," Philippine Economics Journal, Vol. V (Spring 1967), and also N.A. Tan, "The Structure of Protection and Resource Flows in the Philippines," an unpublished Ph.D. dissertation, University of the Philippines, 1979.

15. See B. Balassa (ed.), The Structure of Protection in Developing Countries (Baltimore: The John Hopkins University Press, 1971).

16. See R.M. Bautista, J.H. Power and Associates, op. cit.

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