

## PHILIPPINE MANUFACTURED EXPORTS AND THE GENERALIZED SYSTEM OF PREFERENCES

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### 1. Introduction

The Generalized System of Preferences (GSP), adopted during the second session of the United Nations Conference on Trade and Development (UNCTAD) in 1968, calls for the establishment of a system of preferences in favor of exports from developing countries. Under the GSP, developed countries have agreed to grant tariff preferences to all developing countries without requiring reciprocity in return for their concessions.

The GSP is particularly significant in view of the increasing protectionism prevailing in the world economy today. It is interesting to note, therefore, how a system of preferences could initiate steps toward liberalizing trade with developing countries and thus increase LDC exports.

Specifically, this study will attempt to quantify the direct impact of the GSP on Philippine exports and to discuss these trade effects with respect to the country's pattern of trade with selected preference-giving countries. From this discussion, we hope to identify which among the preference-giving countries are most effective in implementing their respective schemes of preferences. It is also our purpose to identify those product categories which tend to be affected most favorably by the various schemes of preferences.

### 2. Tariff Preferences: A Theoretical Framework

Tariff preferences are traditionally discussed within the context of their effects on world welfare. World welfare improves or deteriorates depending on the combined effects of trade creation and trade diversion. Trade creation is the increase in imports of preference-giving countries from preference-receiving countries. Trade diversion, meanwhile, is the decline in imports of preference-giving countries from non-beneficiary countries which the former substitute with imports from beneficiary countries.

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Trade creation can *a priori* be expected to improve world welfare. The reduction in the tariff on a particular product results in a benefit to consumers because of the lower domestic prices. The preferred country's export production is increased and resources in the preference-giving country which were formerly used in the manufacture of the product are reallocated to more efficient uses. Everyone else is better off and world welfare increases.

Effects of trade diversion are more uncertain depending on whether lower-cost imports from beneficiaries are substituted for higher-cost imports from non-beneficiaries. Thus, if trade diversion causes a shift from an inefficient non-preferred source of imports to a more efficient preferred source, resource cost decreases and world welfare improves provided that the resources in the former are reallocated to more efficient activities. Conversely, world welfare deteriorates if inefficient sources are substituted in favor of efficient ones.

The static effects of tariff preferences can be illustrated using the graphs below. Let Figures 1 and 2 depict the demand and supply of a particular import product from non-beneficiary country (A) and beneficiary country (B), respectively. Figure 3 represents the demand and supply situation for local import-substitutes in the preference-granting nation (C). The tariff-inclusive prices for the non-beneficiary and beneficiary export products are  $P_A + t$  and  $P_B + t$ , respectively.

This graphical model is taken from Baldwin and Murray (1977), the two basic assumptions of which are: (a) perfect substitutability between imports and local import-substitutes; and (b) perfect elasticity of supply in all countries.

To make clear the impact of tariff preferences, we shall compare two different situations as in the following:

- (a) Case 1: tariffs are reduced on all imports from A and B (tariff liberalization)
- (b) Case 2: tariffs are reduced on imports from B but maintained on imports from A (preferential treatment).

In Case 1, prices for both A and B's products decline to  $P_A$  and  $P_B$ , respectively. Imports from A increase from  $Q_{A2}$  to  $Q_{A3}$ , while imports from B increase from  $Q_{B1}$  to  $Q_{B2}$ . These reductions in tariff cause C's demand curve to shift from  $D_C$  to  $D_C'$ .<sup>1</sup> Quantity demanded there

<sup>1</sup>A shift in the demand curve occurs because of a change in the price(s) of substitute good(s).

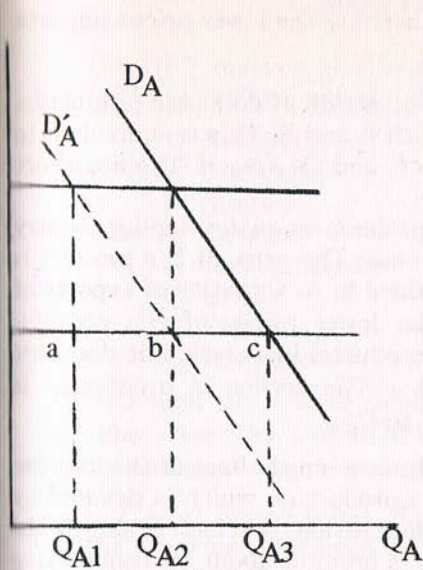


Figure 1—Non-Beneficiary Country

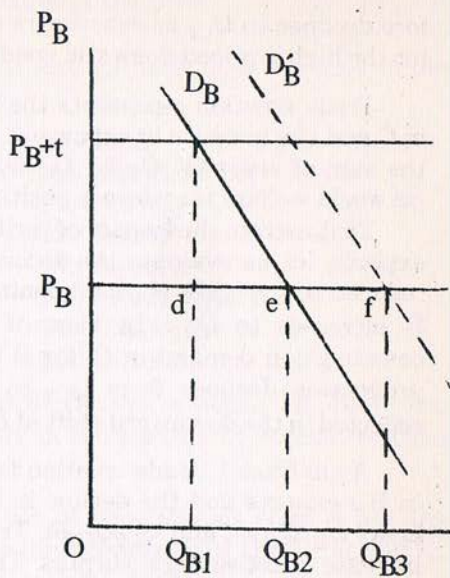


Figure 2—Beneficiary Country

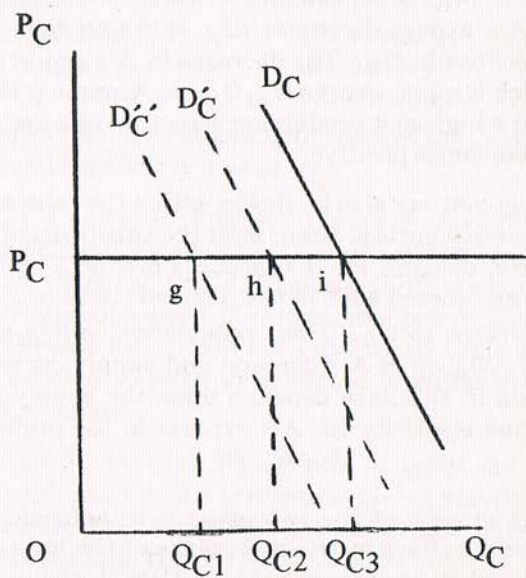


Figure 3—Preference-Giving Country

fore declines to  $Q_{C1}$  as consumers substitute the lower priced imports for the higher priced domestic goods.

Trade creation represents the contraction of domestic production in C and the increase in exports of both A and B. This is equivalent to the sum of areas  $Q_{C1}Q_{C3}ig$ ,  $Q_{A2}Q_{A3}cb$ , and  $Q_{B1}Q_{B2}ed$ . The net effect on world welfare therefore is positive.

To illustrate the impact of tariff preferences on developing country exports, let us evaluate the second case. The price of B's product is reduced to  $P_B$  while  $P_A + t$  is maintained in A. Quantity of exports of B increases to  $Q_{B2}$ . In view of the lower prices of B's product, consumption demand in C (for B's products) increases, but domestic production declines from  $Q_{C3}$  to  $Q_{C2}$ . The decline in production is reflected in the downward shift of  $D_C$  to  $D'_C$ .

As in Case 1, trade creation is the combined effect of the increase in B's exports and the decline in C's production which is denoted by areas  $Q_{B1}Q_{B2}ed$  and  $Q_{C2}Q_{C3}ih$ . Trade creation, in effect, is simply the increase in consumers' surplus. This is brought about by transferring part of the tariff revenue foregone and part of the producers' surplus to consumers.

Initially, there will be no change in the market situation for A. However, as C begins to substitute lower priced imports from B, demand for A's export decreases ( $D_A$  shifts to  $D'_A$ ). Consequently, production declines to  $Q_{A1}$ . The decrease in A's exports reflects trade diversion which is equal to area  $Q_{A2}Q_{A3}cb$ . Assuming that this results in a shift from a high cost production structure to a low cost structure, then trade diversion is positive.

Trade diversion can also be shown within the context of B's export demand and supply curves. Because of the substitution of B's exports for A's exports, demand for the former's products will experience an increase, i.e., an upward shift in the demand curve to  $D'_B$ . Production, therefore, increases to  $Q_{B3}$ . This trade diversion ( $Q_{B2}Q_{B3}Fe$ ) is equal to the area  $Q_{A2}Q_{A3}cb$  in A's demand and supply curves. This size of trade diversion in this case depends upon the supply elasticity in A and the demand elasticity for A's exports in the preference-granting country (C).

The effect in each of the two cases is to enhance world welfare. In Case 1, world welfare increases because of the increase in both the exports of A and B (trade creation). In Case 2, the increase in world welfare is brought about by an increase in B's exports because of both trade creation and trade diversion. The magnitude of these changes would depend on the relative elasticities of demand for each country's products and the relative supply elasticities in the countries concerned.

### 3. Major Features of the GSP

The GSP consists of a total of sixteen individual schemes implemented by the following countries:

- |                   |                 |
|-------------------|-----------------|
| 1. Australia      | 9. Japan        |
| 2. Austria        | 10. New Zealand |
| 3. Bulgaria       | 11. Norway      |
| 4. Canada         | 12. Poland      |
| 5. Czechoslovakia | 13. Sweden      |
| 6. EEC            | 14. Switzerland |
| 7. Finland        | 15. U.S.A.      |
| 8. Hungary        | 16. U.S.S.R.    |

Although the system consists of various schemes, all share common characteristics and differ only in the manner of implementation. These basic elements are as follows:

1. *List of Beneficiaries*: The list of beneficiaries eligible for preferential treatment includes all member countries of the Group of 77. In addition, the following countries are also eligible:

- |             |             |
|-------------|-------------|
| 1. Albania  | 7. Nauru    |
| 2. Bulgaria | 8. Portugal |
| 3. China    | 9. Samoa    |
| 4. Israel   | 10. Spain   |
| 5. Mongolia | 11. Tonga   |
| 6. Muscat   | 12. Turkey  |
|             | 13. Vietnam |

Dependent territories belonging to some of the developed countries are also accorded beneficiary status.

2. *Product Coverage*. Product coverage actually varies from scheme to scheme, but generally, all manufactured and semi-manufactured products under the CCCn Chapters 25-99 are covered. Textiles, leather, and articles of leather, footwear, and petroleum products however are not covered for certain beneficiaries in some of the schemes. A limited number of selected agricultural products are also included in some of the schemes.

3. *Depth of Tariff Cut*. The depth of tariff cut varies among schemes although most of the preference-giving countries grant duty-free treatment on most products. The difference between the MFN rate and the preferential rate is called the GSP margin. The magnitude of this margin reflects the price advantage enjoyed by the beneficiary countries over the non-beneficiary nations.

4. *Safeguard Mechanism*. A safeguard mechanism is included in every scheme primarily to protect the interests of the preference-

giving countries. There are two basic forms of safeguard mechanism: (a) escape clause measures; and (b) *a priori* limitations.

5. *Rules of Origin*. To qualify for the GSP, products must satisfy certain Rules of Origin required by the different schemes. The three basic conditions for qualifying under the Rules of Origin are: (a) direct consignment, (b) process criterion, and (c) value-added criterion.

#### 4. Framework

##### 4.1 Estimation of Trade Creation

To evaluate the impact of the GSP on Philippine export performance, a trade creation model will be estimated to measure the degree of export expansion arising from tariff preferences. Traditionally, trade effects are expressed in terms of trade creation and trade diversion. Because of the difficulty in quantifying trade diversion, only trade creation will be estimated in this study.

The trade creation model is derived by taking the import demand function in its multiplicative form,

$$(1) \quad M = \alpha_0 P^{\alpha_1} Y^{\alpha_2}$$

where:

$M$  : imports

$P$  : ratio of import price level to domestic price level

$Y$  : real income.

Using the price variable to take account of tariff rates, then

$$(2) \quad P = P^*(1 + t)$$

where  $P^*$  is border price. Substituting (2) for  $P$  in (1), then

$$(3) \quad M = \alpha_0 [P^*(1 + t)]^{\alpha_1} Y^{\alpha_2}$$

From (3) we can then estimate the change in imports arising from a change in tariffs by taking the partial derivative of  $M$  with respect to  $t^2$ . On the

assumption that  $\frac{\partial Y}{\partial t} = 0$ , we obtain from (3):

$$(4) \quad \frac{\partial M}{\partial t} = \alpha_0 \cdot Y^{\alpha_2} \alpha_1 \cdot P^* [P^*(1 + t)]^{\alpha_1 - 1}$$

<sup>2</sup>A similar derivation is found in Alhamid (1982).

Multiplying both sides of (6) by  $\frac{t}{M}$ , where  $M$  is as defined in (1) and (2):

$$(5) \quad \frac{\partial M}{\partial t} \frac{t}{M} = \frac{\alpha_o Y^{\alpha_2} \alpha_1 P^* \cdot [P^*(1+t)]^{\alpha_1 - 1} t}{\alpha_o Y^{\alpha_2} [P^*(1+t)]^{\alpha_1}}$$

$$(6) \quad = \frac{\alpha_1 t}{(1+t)}$$

It can be shown that  $\alpha_1$  in (1) is the price elasticity of demand for imports, which may be denoted as

$$\epsilon_p = \frac{\partial M}{\partial P} \cdot \frac{P}{M} = \alpha_1$$

Letting  $\epsilon_t$  denote tariff elasticity therefore, (6) may be rewritten as:

$$(7) \quad \epsilon_t = \epsilon_p \cdot \frac{t}{(1+t)}$$

Furthermore (6) may be used to compute for the change in imports:

$$(8) \quad \Delta M = \epsilon_p \cdot \frac{\Delta t}{(1+t)} \cdot M$$

where  $M$ : initial level of imports.

Equation (7) is the tariff elasticity term used in estimating trade creation  
Equation (8) is the standard equation for trade creation which if rearranged yields

$$(9) \quad TC_i = M_i \epsilon_i \left[ \frac{dt_i}{(1+t_i)} \right]$$

where:

$TC_i$  : trade creation for product  $i$

$M_i$  : initial level of donor country imports of product  $i$   
from beneficiary countries

$\epsilon_i$  : price elasticity of import demand for product  $i$

$dt_i$  : the change in the tariff rate on product  $i$ .

The basic assumptions underlying equation (9) are enumerated as follows:

- (a) Countries are price takers in the world market.
- (b) Imports and domestically produced goods are perfect substitutes.
- (c) Supply elasticities are infinite.

Using the trade creation model, three sets of estimates will be derived to evaluate separately the three preferential schemes (U.S., Japan, EEC) under varying assumptions. The first estimate is based on GSP data given its institutional limitations such as ceilings and limited product coverage. The second set will be based on the assumption of a GSP without ceilings but with product limitations retained. Finally, the third set of estimates will calculate trade creation given the condition that GSP lifts all of its institutional restrictions. All estimates will assume duty-free treatment for all products.

The effect of ceilings is measured by subtracting the value of exports that exceed the ceilings from total exports which are eligible for the GSP.<sup>3</sup> Limited product coverage, on the other hand, is estimated to include only those exports which are granted COs.

Estimates of trade creation obtained under each of the above conditions should provide an evaluation of the GSP according to the following considerations: (1) which among the preferential schemes provides for the largest trade creation; (2) which among the various product categories experience large trade creation; and (3) to what extent the institutional limitations of GSP tend to offset any benefits that are initially derived from reduced tariffs.

#### 4.2 Paired Difference Test

The performance of GSP exports and non-GSP exports will be analyzed over the period 1975 to 1981 except for the U.S. in which the corresponding period is 1976 to 1981. Any difference in performance between these two groups may then be attributed to the effects of GSP. To find out whether the difference in performance is significant, we subject this difference to a paired difference test using the standard t-distribution test.

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<sup>3</sup>The value of ceiling is obtained from UNCTAD's *Operations and Effects of Generalized System of Preferences* (1976).



The difference between the GSP and non-GSP exports will be estimated with respect to: (a) an index of growth (1975-81); (b) average annual growth rates; and (c) average annual exports in constant 1972 prices.

We test for the statistical significance of this difference by constructing a null hypothesis that the sample mean of differences is equal to zero (i.e. there is no significant difference between the means of GSP and non-GSP exports). We reject this null hypothesis if our test strongly indicates that the mean of sample differences is not equal to zero.

Our test of hypothesis is expressed in the following:

$$H_o = \mu_d = \mu_1 - \mu_2 = 0$$

$$H_a = \mu_d = \mu_1 - \mu_2 \neq 0$$

where:

$H_o$  : null hypothesis

$H_a$  : research hypothesis

$\mu_d$  : population mean of differences

$\mu_1$  : population mean of GSP exports

$\mu_2$  : population mean of non-GSP exports.

To test the above, we use the standard test statistic  $t$ ,

$$t = \frac{\bar{x}_d - \mu_d}{s_d / \sqrt{n_d}}$$

where:

$\bar{x}_d$  : sample mean of differences

$\mu_d$  : population mean of differences

$S_d$  : sample standard deviation of differences

$n_d$  : number of differences (observations)

The values of the  $t$ -statistic are then compared with critical values of  $t(t\alpha)$  based on  $n-1$  degrees of freedom. If the  $t$ -statistics falls within a region that is greater than  $\pm t\alpha$  then the null hypothesis is rejected, i.e., the difference in performance is statistically significant. If the  $t$ -statistic falls within a region which is less than  $\pm t\alpha$ , we conclude that there is no sufficient evidence to support the research hypotheses.

The basic assumptions underlying the above  $t$  distribution are:

- (1) The population of differences is normally distributed.
- (2) The sample differences are randomly selected from a population of differences.

#### 4.3. Regression and Correlation Techniques

Regression analysis will be undertaken and the Spearman rank correlation technique will be used to determine the significance of any correlation between: (a) GSP margins and average annual growth rates of GSP exports; (b) GSP margins and average annual GSP exports; and (c) GSP margins and comparative advantage ratios.

Significant correlation between the above variables would suggest that the magnitude of the GSP margins is a major factor in predicting the performance of GSP exports.

#### 4.4. Nature of Data

Export data were obtained from the National Census and Statistics Office (NCSO) classified according to the two-digit Philippine Standard Commodity Classification Code. Only manufactured exports (PSCC 5 to 8) were included in the study.

Tariff data for this study were obtained from the following sources:

- (a) U.S. (1976): UNCTAD
- (b) Japan (1974): *International Customs Journal*
- (c) EEC (1981): *International Customs Journal*.

Since it is assumed that duty-free treatment is granted to all products, the tariff rates will be equivalent to the level of GSP margins.

Price elasticities of import demand on a disaggregated level were taken from the following sources: (See Table 1).

Country	Source
U.S.	Kreinin (1973); Almon (1974); Stern (1976)
Japan	Kawanabe (1978); Stern (1976)
EEC	Cline (1978)

Table 1—Import Price Elasticities

PSCC Code	Commodity Description	USA	Japan	EEC
PSCC 51	Organic Chemicals	0.60	1.46	0.96
52	Inorganic Chemicals	0.60	0.92	0.96
53	Dyeing, Tanning, and Coloring Materials	1.56	4.95	0.92
54	Medicinal and Pharmaceutical Products	0.76	1.42	0.92
55	Essential Oils and Perfume Materials	0.46	0.90	0.92
56	Fertilizers	1.84	0.38	0.92
57	Explosives	1.84	1.42	0.92
58	Artificial Resins and Plastic Materials	0.55	3.48	1.32
59	Chemical Materials and Products	0.46	1.32	0.96
5	Chemicals and Related Products	<u>1.84</u>	<u>1.64</u>	<u>0.92</u>
61	Leather, and Leather Manufactures	0.74	1.42	1.09
62	Rubber Manufactures	6.00	1.23	0.92
63	Cork and Wood Manufactures	0.51	1.42	0.83
64	Paper and Paperboard	0.53	2.44	0.79
65	Textile Yarns and Fabrics	1.01	1.38	1.07
66	Non-Metallic Mineral Manufactures	0.95	1.42	1.12
67	Iron and Steel	2.00	5.20	1.47
68	Non-Ferrous Metals	0.87	1.18	1.47
69	Manufactures of Metal	0.80	5.30	1.47
6	Manufactured Goods Classified Chiefly by Materials	<u>1.84</u>	<u>1.42</u>	<u>0.92</u>
71	Power Generating Machinery & Equipment	1.84	1.89	0.92
72	Machinery Specialized for Particular Ind.	0.92	2.07	0.92
73	Metal Working Machinery	0.98	4.37	0.92
74	General Industrial Machinery & Equipment	0.33	1.07	0.92
75	Office Machines	1.84	1.65	0.92
76	Telecommunications & Sound Rec. Equip.	1.40	1.01	0.92
77	Electrical Machinery	0.81	2.51	0.92
78	Road Vehicles	2.40	1.62	1.15
79	Other Transport Equipment	4.88	2.02	0.92
7	Machinery and Transport Equipment	<u>1.84</u>	<u>1.01</u>	<u>0.92</u>
81	Sanitary, Plumbing & Heating Equipment	1.84	1.42	0.92
82	Furniture and Parts	6.00	1.42	0.92
83	Travel Goods and Handbags	1.84	1.42	0.92
84	Articles of Apparel & Clothing Accessories	3.77	1.42	0.92
85	Footwear	0.79	1.42	0.92
86		—	—	—
87	Professional and Scientific Equipment	1.84	2.81	1.26
88	Photographic Apparatus and Equipment	1.08	2.96	1.26
89	Miscellaneous & Manufactured Articles	3.77	1.42	1.38
8	Miscellaneous Manufactured Products	<u>1.84</u>	<u>1.42</u>	<u>0.92</u>

Note: Sources of these elasticity estimates are the following:

- USA: Kreinin (1973), Almon (1974), Stern (1976)
- Japan: Kawanabe (1978), Stern (1976)
- EEC: Cline (1978)

## 5. Results and Implications

## 5.1. Estimation of Trade Creation

Tariff elasticities which were derived from the import demand function and used in the trade creation model are presented in Table 2. The results of estimating trade creation under different assumptions are presented in Tables 3, 4 and 5.

The U.S. scheme of preferences has the largest estimated trade expansion. Japan, on the other hand, yields the smallest trade creation

The percentage increases in trade expansion in all of the estimates are relatively low in comparison with the general trends of growth in the world's manufactured exports. Even with the assumption of a GSP without any ceiling restrictions and product limitations, the rate of increase in Philippine manufacture trade with the U.S., Japan and EEC is still far from significant considering that average rate of growth (1970-1976) of manufactured exports from the developing countries is approximately 26 per cent (UNCTAD, 1980).

Our estimates of trade creation with the institutional limitations are much lower than the estimates of Murray (1977) and Baldwin and Murray (1977) which report a 24 per cent increase in trade expansion. Iqbal's (1974) estimates, however, are closer to ours at 2 per cent.

Table 2—Tariff Elasticities of Import Demand

PSCC Code	Commodity Description	USA	Japan	EEC
PSCC 51	Organic Chemicals	0.038	0.122	0.096
52	Inorganic Chemicals	0.038	0.058	0.065
53	Dyeing, Tanning, and Coloring Materials	0.099	0.388	0.068
54	Medicinal and Phamaceutical Products	0.042	0.117	0.079
55	Essential Oils and Perfume Materials	0.030	0.054	0.069
56	Fertilizers	0.076	0.010	0.049
57	Explosives	—	0.104	0.079
58	Artificial Resins and Plastic Materials	0.046	0.209	0.146
59	Chemical Materials and Products	0.035	0.097	0.072
Sub-total 5		0.124	0.117	0.079
61	Leather, and Leather Manufactures	0.054	0.184	0.043
62	Rubber Manufactures	0.377	0.082	0.044
63	Cork and Wood Manufactures	0.040	0.137	0.049
64	Paper and Paperboard	0.035	0.164	0.072
65	Textile Yarns and Fabrics	0.119	0.120	0.116
66	Non-Metallic Mineral Manufactures	0.106	0.093	0.068

Table 2 (Continued)

PSCC Code	Commodity Description	USA	Japan	EEC
67	Iron and Steel	0.145	0.390	0.086
68	Non-Ferrous Metals	0.06	0.081	0.070
69	Manufactures of Metal	0.061	0.433	0.096
Sub-total 6		<u>0.149</u>	<u>0.117</u>	<u>0.059</u>
71	Power Generating Machinery & Equipment	0.109	0.175	0.037
72	Machinery Specialized for Particular Ind.	0.054	0.141	0.050
73	Metal Working Machinery	0.058	0.430	0.045
74	General Industrial Machinery & Equipment	0.019	0.085	0.041
75	Office Machines	0.109	0.150	0.055
76	Telecommunications & Sound Rec. Equip.	0.083	0.093	0.053
77	Electrical Machinery	0.059	0.192	0.055
78	Road Vehicles	0.108	0.174	0.115
79	Other Transport Equipment	0.336	0.160	0.037
Sub-total 7		<u>0.111</u>	<u>0.086</u>	<u>0.055</u>
81	Sanitary, Plumbing & Heating Equipment	0.160	0.110	0.065
82	Furniture and Parts	0.510	0.164	0.046
83	Travel Goods and Handbags	0.190	0.152	0.086
84	Articles of Apparel & Clothing Accessories	0.531	0.178	0.120
85	Footwear	0.043	0.227	0.096
86		—	—	—
87	Professional and Scientific Equipment	0.200	0.196	0.069
88	Photographic Apparatus and Equipment	0.049	0.324	0.079
89	Miscellaneous & Manufactured Articles	0.330	0.138	0.089
Sub-total 8		<u>0.166</u>	<u>0.154</u>	<u>0.074</u>

Note: Elasticities were derived using the Formula:  $E_{ij}^* (t_{ij}/1+t_{ij})$

where  $\epsilon$  = price elasticity of import demand

$t$  = MFN tariff rate

$i$  = product  $i$

$j$  = country  $j$

Table 3—Estimates of Trade Creation<sup>a</sup> With Ceilings  
and Product Limitations

	U.S.A.		Japan	
	Value <sup>b</sup>	Per Cent <sup>c</sup>	Value <sup>b</sup>	Per Cent <sup>c</sup>
Total Manufactures	4,741,646	2.7	1,157,068	1.5
PSCC 51	—	—	18,349	0.5
52	—	—	719	0.01
53	—	—	7,723	38.8

Table 3 (Continued)

	U.S.A.		Japan	
	Value <sup>b</sup>	Per Cent <sup>c</sup>	Value <sup>b</sup>	Per Cent
54	—	—	16,314	4.9
55	46	0.3	24,169	4.1
56	—	—	—	—
57	—	—	—	—
58	—	—	—	—
59	1,726	1.1	62,886	3.7
Sub-total 5	<u>1,772</u>	<u>1.0</u>	<u>130,160</u>	<u>0.9</u>
61	642	0.4	14,795	10.6
62	487	0.5	818	2.7
63	191,200	0.4	300,931	6.3
64	261	2.8	236	12.3
65	160,144	1.3	24,838	4.7
66	32,336	1.1	7,298	2.3
67	—	—	—	—
68	42,391	0.1	56,345	0.1
69	4,163	2.4	12,269	22.0
Sub-total 6	<u>431,624</u>	<u>0.4</u>	<u>417,530</u>	<u>0.8</u>
71	—	—	—	—
72	2,735	1.6	42,806	9.4
73	—	—	—	—
74	1,334	0.8	131,699	6.6
75	—	—	—	—
76	39,512	3.2	10,526	4.9
77	—	—	28,800	5.4
78	4,182	2.3	24,696	9.2
79	—	—	—	—
Sub-total 7	<u>47,763</u>	<u>2.7</u>	<u>237,827</u>	<u>6.9</u>
81	61,702	4.6	7,492	8.4
82	1,023,538	20.9	29,843	6.0
83	1,321,383	8.6	48,857	3.6
84	195,722	0.8	127,573	1.8
85	422	0.02	13,734	8.3
86	—	—	—	—
87	510	2.1	—	—
88	—	—	4,327	3.0
89	1,657,210	5.6	139,725	3.6
Sub-total 8	<u>4,260,487</u>	<u>5.6</u>	<u>371,551</u>	<u>2.8</u>

<sup>a</sup>No estimates for the EEC were derived because of data constraints.

<sup>b</sup>Based on 1976 trade flows in U.S. dollars.

<sup>c</sup>Per cent increase over 1976 exports.

**Table 4—Estimates of Trade Creation<sup>a</sup> Without Ceilings  
But With Product Limitations**

	U S A		J A P A N		E E C	
	Value	Per Cent <sup>b</sup>	Value	Per Cent <sup>b</sup>	Value	Per Cent <sup>b</sup>
Total Manufactures	6,577,368	3.7	1,237,425	1.6	2,750,502	2.1
PSCC 51	—	—	18,349	0.5	10	0.004
52	—	—	719	0.01	—	—
53	—	—	7,723	38.8	7	7.1
54	—	—	16,314	4.9	—	—
55	46	0.3	24,169	4.1	—	—
56	—	—	—	—	—	—
57	—	—	—	—	—	—
58	—	—	—	—	—	—
59	1,726	1.1	62,886	3.7	779	6.9
Sub-total 5	1,772	1.0	130,160	0.9	796	0.2
61	642	0.4	14,795	10.6	—	—
62	487	0.5	818	2.7	—	—
63	211,774	0.4	300,931	6.3	287,164	1.4
64	261	2.8	236	12.3	—	—
65	193,909	1.6	24,838	4.7	296,118	6.5
66	32,336	1.1	7,298	2.3	1,556	3.4
67	—	—	—	—	—	—
68	42,391	0.1	56,345	0.1	18,540	0.04
69	4,163	2.4	12,269	22.0	6,669	7.0
Sub-total 6	485,963	0.5	417,530	0.8	610,047	0.8
71	—	—	—	—	2,032	3.2
72	2,735	1.6	42,106	9.4	520	0.3
73	—	—	—	—	—	—
74	1,334	0.8	131,699	6.6	—	—
75	—	—	—	—	—	—
76	39,512	3.2	10,526	4.9	4,951	0.5
77	—	—	28,800	5.4	—	—
78	4,182	2.3	24,696	9.2	111,452	4.5
79	—	—	—	—	—	—
Sub-total 7	47,763	2.7	237,827	6.9	118,955	2.9
81	61,702	4.6	7,492	8.4	25,846	3.8
82	1,023,538	20.9	29,843	6.0	30,421	2.0
83	1,321,383	8.6	48,857	3.6	108,534	2.6
84	195,722	0.8	127,573	1.8	1,326,001	4.4
85	422	0.02	14,668	8.9	26,045	5.7
86	—	—	—	—	—	—
87	510	2.1	—	—	—	—
88	—	—	4,327	3.0	12,830	0.5
89	3,438,593	11.6	219,148	5.7	491,027	3.8
Sub-total 8	6,041,870	7.9	451,908	3.4	2,020,704	3.9

<sup>a</sup>Based on 1976 trade flows in U.S. dollars.

<sup>b</sup>Per cent increase over 1976 exports.

**Table 5—Estimates of Trade Creation<sup>a</sup> Without Ceilings  
and Product Limitations**

	U S A		J A P A N		E E C	
	Value	Per cent <sup>b</sup>	Value	Per cent <sup>b</sup>	Value	Per cent <sup>b</sup>
Total Manufactures	34,040,046	19.1	8,184,813	10.3	10,785,567	8.4
PSCC 51	35	3.8	488,539	12.2	21,549	9.6
52	—	—	408,936	5.8	—	—
53	—	—	7,723	38.8	7	7.1
54	109	4.2	38,755	11.7	20,744	7.9
55	410	3.0	31,522	5.4	12	7.1
56	—	—	—	—	—	—
57	—	—	—	—	—	—
58	—	—	—	—	—	—
59	5,339	3.5	166,542	9.7	808	7.2
Sub-total 5	5,893	3.5	1,142,017	11.0	43,120	8.5
61	8,405	5.4	25,562	18.4	88	4.3
62	33,763	37.7	2,522	8.2	—	4.4
63	2,117,764	4.0	658,990	13.7	970,417	4.9
64	321	3.5	315	16.4	233	7.2
65	1,440,748	11.9	63,170	12.0	527,015	11.6
66	321,665	10.6	29,532	9.3	3,099	6.8
67	69,725	14.5	159,147	39.0	355,897	8.6
68	1,853,514	6.0	3,470,335	8.1	3,035,770	7.0
69	10,452	6.1	24,143	43.3	8,566	9.0
Sub-total 6	5,856,357	5.9	4,433,716	9.0	4,901,085	6.8
71	2,053	10.9	18	17.5	2,361	3.7
72	9,049	5.4	62,939	14.1	7,711	5.0
73	—	—	—	—	688	4.6
74	3,226	1.9	170,578	8.5	518	4.1
75	—	—	—	—	10,861	5.5
76	101,768	8.3	19,803	9.3	56,785	5.3
77	601	5.9	103,071	19.2	79	5.5
78	19,506	10.8	46,480	17.4	283,400	11.5
79	235	33.6	—	—	2,020	3.7
Sub-total 7	136,438	7.7	402,889	15.5	364,423	5.6
81	216,741	16.0	9,826	11.0	43,654	6.6
82	2,492,021	51.0	81,628	16.4	70,130	4.6
83	2,923,731	19.0	205,498	15.2	359,073	8.6
84	12,553,005	53.1	1,295,014	17.8	3,615,905	12.0
85	77,107	4.3	37,564	22.7	43,524	9.6
86	—	—	—	—	—	—
87	4,878	20.0	236	19.6	—	6.9
88	813	4.9	47,347	32.4	192,163	7.9
89	9,773,062	33.3	529,078	13.8	1,152,490	8.9
Sub-total 8	28,041,358	36.6	2,206,191	15.9	5,476,939	9.7

<sup>a</sup> Based on 1976 trade flows in U.S. dollars.

<sup>b</sup> Per cent increase over 1976 exports.



Contrary to most studies, the ceiling restrictions imposed by the U.S., Japan and the EEC schemes do not seem to have a significant effect on GSP trade. With respect to the U.S., the removal of ceilings only causes an additional expansion of less than \$2.0 million to total trade creation. Per cent-wise, this is equivalent to a 3.7 per cent increase which is not much of an improvement over the 2.7 per cent expansion with the ceilings. The Japanese scheme provides for even lower estimates, from a 1.5 per cent increase with the ceilings to a 1.6 per cent increase without the ceilings.

The impact of product exclusions is greater. Trade expansion of Philippine export to the U.S. rises from a 2.7 rate of increase to 19.1 per cent. The Japanese scheme without any product exclusions causes trade creation to rise by 10.3 per cent compared to the 1.5 per cent if product exclusions were considered. The EEC scheme on the other hand, leads to an increase in trade creation of 8.4 per cent from 2.1 per cent without product limitations.

These results are not inconsistent with the fact that the three preference-giving countries tend to exclude certain product categories in which the Philippines' share in total imports of these countries is relatively significant.

## 5.2 Paired Difference Test

### a. Index of Export Performance

Indexes of Philippine export (GSP and non-GSP) to the U.S., Japan and the EEC are presented in Tables 6, 7 and 8. The results of the statistical tests of significance for the difference are presented in Table 9.

For exports to the U.S., the difference is significant among the chemicals and manufactured goods, including total manufactured exports. In other words, the mean index of GSP in these categories exceeds the mean index of non-GSP exports. For the other categories, however, no significant evidence exists to infer that the means actually differ.

For exports to Japan, the difference is statistically significant for total manufactured exports as well as for manufactured goods (PSCC 6) and machinery (PSCC 7). For the latter, the difference is negative, implying that the non-GSP exports of these products exceed GSP exports. This is not surprising since the manufacture of machinery and equipment is one of Japan's leading industries, in which case a higher degree of import restrictions and tariff protection would be expected.

**Table 6—Index of GSP and Non-GSP Export Performance  
U.S.A.**

	PSCC 5	PSCC 6	PSCC 7	PSCC 8	Total Manufactures
<b>GSP Exports</b>					
1976	100	100	100	100	100
1977	1,073	173	326	123	143
1978	2,420	179	526	164	180
1979	2,613	361	400	178	238
1980	4,657	582	343	268	365
1981	5,887	538	335	311	385
<b>Non-GSP Exports</b>					
1976	100	100	100	100	100
1977	318	125	354	121	124
1978	289	105	498	176	135
1979	741	86	872	162	121
1980	1,592	79	2,485	192	141
1981	1,717	92	3,430	244	176
<b>Difference</b>					
1977	755	48	-28	2	19
1978	2,131	74	28	-12	45
1979	1,872	275	-472	16	117
1980	3,065	503	-2142	76	224
1981	4,170	446	-3095	67	209

**Table 7—Index of GSP and Non-GSP Export Performance  
Japan**

	PSCC 5	PSCC 6	PSCC 7	PSCC 8	Total Manufactures
<b>GSP Exports</b>					
1975	100	100	100	100	100
1976	77	76	593	97	104
1977	214	111	977	158	180

Table 7 (Continued)

	PSCC 5	PSCC 6	PSCC 7	PSCC 8	Total Manufactures
1978	457	141	905	256	268
1979	580	227	828	392	371
1980	1,194	352	761	453	562
1981	1,407	428	332	313	575
<b>Non-GSP Exports</b>					
1975	100	100	100	100	100
1976	455	124	736	308	162
1977	1,023	17	1,152	169	97
1978	925	26	1,569	156	98
1979	1,921	38	1,576	387	189
1980	710	28	1,671	438	109
1981	522	45	2,443	414	113
<b>Difference</b>					
1976	-378	-48	-143	-211	-58
1977	-809	94	-175	-11	83
1978	-468	115	-664	100	170
1979	-1,341	189	-748	5	182
1980	484	324	-910	15	453
1981	885	383	-2,111	-101	462

Table 8—Index of GSP and Non-GSP Export Performance  
EEC

	PSCC 5	PSCC 6	PSCC 7	PSCC 8	Total Manufactures
<b>GSP Exports</b>					
1975	100	100	100	100	100
1976	1	155	2,672	216	185
1977	28	132	3,732	294	225
1978	40	187	29,004	395	370
1979	52	399	27,744	439	469

Table 8 (Continued)

	PSCC 5	PSCC 6	PSCC 7	PSCC 8	Total Manufactures
1980	21	716	11,112	577	613
1981	60	388	23,468	545	513
<u>Non-GSP Exports</u>					
1975	100	100	100	100	100
1976	64	223	812	460	272
1977	43	114	2,800	479	210
1978	47	118	1,032	438	188
1979	19	135	2,175	933	308
1980	197	148	3,039	906	325
1981	77	111	3,158	925	299
<u>Difference</u>					
1976	-63	-68	1,860	-244	-87
1977	-15	18	932	-185	15
1978	-7	69	27,972	-43	182
1979	33	264	25,569	-494	161
1980	-176	568	8,073	-329	288
1981	-17	277	20,310	-380	214

Table 9—T-Values for Statistical Tests of Difference Between GSP and Non-GSP Export Performance

	USA	JAPAN	EEC
1. Total Manu- factures	2.956 <sup>a,b</sup>	2.556 <sup>a</sup>	2.276 <sup>a</sup>
2. PSCC 5	4.165 <sup>a,b,c</sup>	-0.807	-1.371
3. PSCC 6	2.894 <sup>a,b</sup>	2.725 <sup>a,b</sup>	1.994
4. PSCC 7	-1.820	-2.703 <sup>a,b</sup>	2.878 <sup>a,b</sup>
5. PSCC 8	1.687	-0.767	-4.331 <sup>a,b,c</sup>

<sup>a</sup>Significant at the 10% level.<sup>b</sup>Significant at the 5% level.<sup>c</sup>Significant at the 2% level.

Regarding exports to the EEC, the difference is statistically significant for total manufactures and machinery (PSCC 7) in which GSP exports exceed non-GSP exports. In the case of miscellaneous manufactures (PSCC 8) in which non-GSP exports exceed GSP exports, the difference is also significant.

Based on the above statistical results, it appears that total GSP exports of manufactures, in general, performed better than non-GSP exports during the period under study. We cannot however state the same for individual product categories, since the significance of their difference is not consistent for all three schemes of preferences.

#### b. Average Annual Growth Rates and Average Exports

The results of the tests of significance for the differences between GSP and non-GSP exports in terms of: (a) average annual growth rates and (b) average export values are presented below:

**Table 10—T-Values for Tests of Statistical Difference**

	U.S.A		Japan		EEC	
	Ave. Annual Growth Rates	Average Values	Ave. Annual Growth Rates	Average Values	Ave. Annual Growth Rates	Average Values
1. T-Values	2.70	2.158	-2.006	1.668	-0.3617	1.179
2. Level of Significance	2% 5%,10%	5%,10%	10%	10%	*	*

\*Not significant

The results (except for the EEC) support our earlier findings on the difference in export index.

#### 5.3. Regression and Spearman Rank Correlation Analysis

Regression techniques yielded insignificant values for the correlation between: (a) GSP margins and GSP export variables, and (b) GSP margins and capital-labor ratios. Spearman rank correlation coefficients, however were significant in each of the two cases for the U.S. and Japan.

Table 11—Spearman Rank Correlation: GSP Margins and Export Variables

	U.S.A.	Japan	EEC
1. GSP Margins and Average Annual Growth	R = 0.1566 t = 0.868 *	R = 0.2992 t = 1.689 *	R = 0.3752 t = 2.1036 5%
2. GSP Margins and Average GSP Exports	R = 0.5644 t = 3.745 2%,5%,10%	R = 0.38710 t = 2.261 5%, 10%	R = 0.3539 t = 1.966 10%

\*not significant.

The relationship between the capital-labor ratios and GSP margins for each of the three countries is presented in Table 12. The products are ranked according to their labor-intensiveness in which labor-intensity is associated with capital-labor ratios equal to or below 30.00.

It is clear from this table that most of the higher tariffs, i.e., double-digit rates, are clustered around those product categories with lower capital-labor ratios.

Table 12—Spearman Rank Correlation: GSP Margins and Comparative Advantage Ratios

U.S.A.	Japan	EEC
R = 0.3273	R = 0.6706	R = 0.1603
t = 1.8326	t = 5.0519	t = 0.8593
10%	2%,5%,10%	not significant

## 6. Summary and Conclusions

The large trade creation caused by the U.S. scheme can quickly be attributed to the particular nature of trade between the two countries which has developed from strong historical ties. But an even more significant factor lies in the relatively high tariff elasticities of

Philippine manufactured exports to the U.S. Among the three countries under study, exports to the U.S. have the highest estimated tariff elasticities, followed by exports to Japan, and finally by exports to the EEC. Based on this reasoning, we may therefore predict that trade creation for exports to the EEC would be lowest among the three countries (in spite of the fact that estimates were derived in this regard because of the insufficiency of data).

Thus, rather than focus on the rate of utilization as the sole basis for determining the nature of restrictiveness of a scheme of preferences, attention must also be brought to the nature of tariff elasticities facing beneficiary exports.

### *6.1. Major Products Affected by GSP*

The major product categories most affected by the preferential schemes have been found to be those with relatively high tariff elasticities.

In the case of the U.S. scheme, furniture (PSCC 82), which has the highest estimated per cent increase in trade expansion and two other product categories comprising the bulk of this trade expansion (travel goods and miscellaneous manufactures) account for among the highest tariff elasticities at 0.51, 0.19 and 0.33, respectively.

In the case of the Japanese scheme, dyeing and tanning materials (PSCC 53) and manufactures of metal (PSCC 69) have the highest estimated per cent expansion and at the same time the highest elasticities at 0.388 and 0.433, respectively.

In the EEC scheme (based on the assumption of a GSP trade without ceilings but with product limitations), the product category (apparel and clothing) with the highest tariff elasticity (0.12) accounts for the largest share in total trade expansion. Other product categories, e.g. textile yarns (PSCC 65) and manufactures of metal (PSCC 69) with relatively high per cent increases also have high tariff elasticities (0.116 and 0.09 respectively) with respect to the other products.

The major products identified in the preceding paragraphs are also found to rank among the country's more labor-intensive products. Thus, the GSP tends to provide for large trade creation among product categories in which the Philippines has a comparative advantage.

## 6.2 *Impact of Ceilings and Product Limitations*

The impact of ceiling restrictions on trade expansion is quite minimal contrary to findings in most other studies on the GSP. In the U.S. scheme, the imposition of ceilings actually results in approximately \$1.8 million in value of export trade foregone. Per cent increase in trade expansion declines to 2.7 per cent from the 3.7 per cent without the ceilings. With regard to the Japanese scheme, per cent expansion decreases to 1.5 per cent from a 1.6 per cent rate of trade expansion. This is equivalent to only about \$80,357 in export values of trade foregone.

A major explanation behind this insignificant effect of ceilings can be traced to the following reasons. First is the fact that a substantial volume of trade is already denied GSP treatment because of the product exclusions which are inherent in the various schemes of preferences. In most cases, the volume of trade denied accounts for a substantial share of the country's total export trade. This leaves only those products whose share in total trade may not be as significant as those which are excluded. In other words, the level of expansion of Philippine exports has yet to approach the ceiling requirements of the different schemes of preferences.

Second, the country's level of exports in most product categories is still relatively low compared to total exports of all beneficiary countries. As such, ceilings are not yet expected to affect the country's exports of these categories.

Third, in certain other categories, the Philippines competes with the newly industrialized countries (NICs) whose exports account for a major share of imports of the preference-giving countries. As a result it is increasingly difficult for most of the country's manufactured exports to penetrate developed country markets especially if NIC exports also enjoy the same privileges.

The results of our estimates show that product limitations constitute the major obstacle to the country's GSP trade. More than \$1.8 million in value of export trade is foregone because of the product limitations of the U.S. scheme of preferences. Rate of expansion is estimated to jump to 19 per cent from 3.7 per cent if these product limitations are withdrawn. Philippine trade with Japan is expected to forego \$6.9 million of trade because of the product exclusions. The gains from preferential trade with the EEC, on the other hand, are estimated to reach \$8 million if coverage of the scheme is expanded to include all Philippine exports.

Furthermore, an exceptional increase in trade expansion is expected to be experienced by certain product categories upon inclusion



in the GSP. Typical of these products are apparel and clothing (PSCC 84), furniture (PSCC 82), travel goods (PSCC 83), textile yarns (PSCC 65) and footwear (PSCC 85).

The effects of product limitations mentioned above are consistent with the UNCTAD's report on the rates of utilization of the three schemes of preferences which range from about 16 to 30 per cent. Thus, with the lowest utilization rate, the U.S. scheme would naturally be expected to yield the largest trade expansion if coverage of the scheme is broadened to include more product categories. Obviously, therefore, the GSP tends to restrict trade before the start of anything.

The restrictiveness of ceilings and product limitations explains the reason for the small volume of trade resulting from tariff preferences. As seen in the preceding chapter, the average growth of manufactured exports of developing countries for the period 1970-76 is approximately 26 per cent. This rate is far above the estimated percentage increases of 2.7 per cent and 1.5 per cent for the U.S. and Japanese schemes, respectively.

### *6.3. Trade Effects and Actual Performance*

The estimated trade effects that were derived from our trade creation model differ from the indexes of actual performance of GSP exports. Unlike the results in the former, GSP exports experience favorable growth rates and the major product categories with exceptional performances under both GSP and non-GSP arrangements seem to fall within the chemicals (PSCC 5) and machinery (PSCC 7) groups.

The difference in the results may not be surprising. In fact, considering the very nature of the trade creation effects as well as the export indexes, a difference should be expected.

Trade effects measure the extent of trade expansion arising from tariff reductions. In other words, emphasis is placed on how the price advantages enjoyed by beneficiary countries can induce an expansion of these countries' exports. An index of exports, however, would reflect export performance which takes into account a multitude of factors. The increase in exports as depicted by an index would already incorporate various other factors aside from price which tend to influence exports. While trade creation measures export expansion based on the price variables, an index of export values reflects the performance of these exports over time with respect to all other factors such as income, taste, political factors and so forth.

A comparison of the estimates of trade creation and the index of GSP exports clearly indicates that the performance of these exports is

significantly affected by several factors other than price. In fact, the small values of trade creation relative to high average rates of growth depicted by the index suggest that price advantages may not be significant determinant of the growth of GSP exports.

Application of regression analyses and Spearman rank correlation techniques yielded insignificant values when we tried to determine the relationship between GSP export variables and the size of the GSP margins. The various estimation results failed to establish any consistent and significant relationship between the two variables. The inconclusiveness of these results implies that the impact of preferential advantages on the performance of GSP exports may not be significant or as critical as originally perceived. The total effect of GSP therefore must be evaluated not only in terms of the tariff variable but in terms of other significant variables as well.

#### *6.4 Policy Implications and Further Research*

To fully maximize benefits from the GSP, it is quite apparent that serious efforts must be undertaken to diversify the country's manufactured exports. In addition to the traditional manufactured products such as garments and furniture, etc., other nontraditional export categories must also be tapped. Particular attention must be focused on those product categories in which the base level of exports is still relatively low and in which the market share has not yet been dominated by the NICs. Basic criteria for these exports must not fail to consider however the levels of tariff elasticities and the degree of labor intensiveness.

The most restrictive aspect of the GSP (at least in the case of the Philippines) is its limited product coverage. While it may be difficult to convince donor countries to expand coverage of their respective schemes, the Philippines should nevertheless continue to demand not only the inclusion of more products but also the inclusion of products which are of particular interest to the Philippines.

Finally, the system of administration and monitoring of the GSP (in both the donor and beneficiary countries) must further be improved to minimize uncertainty on the part of individual exporters. Information on the imposition of ceilings prior to any shipment would greatly help to facilitate implementation of the GSP's procedural requirements.

Further research on the GSP may be undertaken to evaluate the effects of the Tokyo Round on the country's GSP exports. It may be interesting to find out the extent to which the accession of the Philippines to GATT membership might affect the GSP margins and export performance as a whole.

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