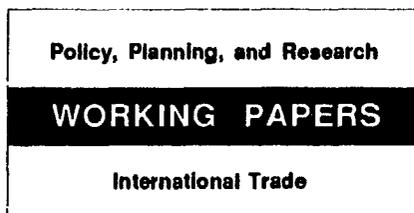


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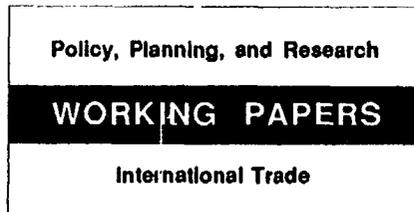
# Do African Countries Pay More for Imports?

## Yes

Alexander J. Yeats

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Overpricing iron and steel imports in Africa supports the theory that less competition—in international and domestic markets—leads to higher prices.



Numerous analysts have studied the influence of market structure on performance in domestic markets in industrial countries. Most show that prices and profits are higher, and resources less efficiently allocated, in markets lacking aggressive competition.

Using techniques similar to the earlier studies, Yeats examined the relative prices paid for iron and steel products by selected African and other developing and developed countries.

His findings parallel those of the earlier studies. Typically, international markets that are more concentrated (less competitive), or that rely on fewer trade contacts, bring higher prices.

Analysis of the price premiums that 20 former French colonies paid for iron and steel

imports from France shows excess price margins so high as to have policy implications since they seriously drain limited resources.

Over the longer term (1962-87), the African countries paid an average premium of 20 to 30 percent over other importers. The losses from those prices came to about \$2 billion by 1987 — a figure roughly equal to the combined long-term debt in 1987 of Burkina Faso, Chad, Mauritius, and the Central African Republic.

This overpricing extends to other (non-French) African countries. Former colonies of Belgium, Portugal, and the United Kingdom still pay premiums of 20 to 30 percent on imports from those three developed countries.

This paper is a product of the International Trade Division, International Economics Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Jean Epps, room S8-037, extension 33710 (44 pages with tables).

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**Yes**

**by**

**Alexander J. Yeats**

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Alexander J. Yeats\*

## I. Introduction

While considerable attention has been devoted to the study of selling prices in domestic markets of industrial countries, there have been very few analyses that extended the investigations to prices in international trade. 1/ The conclusions of the few studies that have been undertaken parallel those which would be predicted by theory. When monopoly elements exist in international markets, prices and profits rise above levels which would prevail in a more competitive environment. This has important implications since the problems of whether industrial nations or transnational corporations abuse market power and extract excessive profits, whether alternative sources of supply offer lower prices, or whether trade and commercial policies result in higher import prices, can be crucial for developing countries. Since many developing countries are typically faced with the problem of making optimal use of limited resources, it is important

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1/ Examples of studies that have tied market imperfections to higher prices, profits, and poorer performance of domestic firms include Bain (1951), Bell and Murphy (1969), Mann (1966) and Yeats (1974). Studies by Hewett (1974), UNCTAD (1975) and Yeats (1978) achieved similar results in studies of the functioning of international markets. Scherer (1970) provides a useful discussion of the underlying theoretical considerations affecting market structure and performance.

that they pay the lowest possible prices for imports of industrial equipment and production inputs required for economic growth. However, if market imperfections exist, or if competition is less vigorous than it might be under different conditions, there is the possibility that some developing countries may be paying in excess for imports, or receive less than competitive prices for exports.

In the view of some economists, various institutional factors combine to work against developing countries in their efforts to achieve the best possible terms for imports. Helleiner (1978) argues that restrictive trade practices, national and international cartels, or lack of some countries' countervailing power may work against the efficient functioning of international markets. An additional problem is that national antitrust laws are often weak nonexistent, or unenforceable at the international level. Similarly, Edwards (1972) documents the adverse effects of restrictive practices like inter-firm agreements for the allocation of territorial markets; pooling and allocation of patents, trademarks, and copyrights; fixing of prices and price relationships including discriminatory pricing; allocation of total amounts of export business; and establishment of reciprocal, exclusive, or preferential dealing. At the national level, inter-firm agreements on exports extend not only to the allocation of foreign markets, but even to individual foreign customers, allocation of specific goods to be

exported, fixing of prices and levels of bidding on foreign contacts and the selection in advance of the firm that will submit the lowest bid.

Using extensive time series information on unit values for homogenous goods, this paper first examines the distribution of import prices paid by developing countries whose trade is highly concentrated with a major exporting country (France), and compares these prices with those paid to France by other countries whose imports come from more diversified sources. 3/ Where evidence of "excess" prices are found the paper attempts to quantify the overall level of economic costs involved. In addition, the analysis employs correlation and regression tests to account for (quantify) the influence of other economic and institutional factors such as the degree of market concentration, size of the importing market, or the number of alternative trading contacts on relative prices. Next, the paper attempts to determine if other European countries (e.g., Belgium, Portugal and the United Kingdom) follow similar pricing policies with former colonies). The paper closes with an overall assessment of the findings for developing countries trade and commercial policies and also suggests some lines of related research that appear to have a high priority.

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3/ There is a potentially important inter-active effect between the influence of market structure on prices and investment links between French exporting firms and associated enterprises in the developing countries. Given the formal institutional links that exist between exporting and importing firms, the latter could have little incentive (or capacity) to turn to non-French sources for imports even if they were more competitively priced. While an analysis of the precise relation(s) between French firms and their associated companies in developing countries is beyond the scope of the present study, the empirical results of this investigation strongly suggest the matter warrants further analysis.

## II. The Methodological Approach

For a test of the potential influence of market structure on international prices, data on French exports of iron and steel products were compiled directly from United Nations Series D Commodity Trade Tapes. These computerized records provide detailed information on the quantity and value of shipments (f.o.b.) on a joint product-by-country basis which can be used to compute unit values for exports. <sup>4/</sup> The decision to examine French unit values was based on the fact that a number of former colonial associates are highly dependent on France for imports (See Appendix 1 for relevant empirical information on this point including French-African "trade intensity" ratios). In addition, some useful 1963-1973 data on French export unit values were available from an earlier study (Yeats 1978) that could now be extended to 1987. While France was selected as the main focus for both the present and earlier study due to a very high trade intensity with former colonies, this study will also show that the findings can be generalized (See Table 5) to

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<sup>4/</sup> The free-on-board (f.o.b.) export unit value for product  $i$  shipped to country  $j$  ( $U_{ij}$ ) is derived from:

$$(1) U_{ij} = [V_{ij} \div Q_{ij}] \times 100$$

where  $V_{ij}$  is the value of the export shipment and  $Q_{ij}$  is the quantity (normally measured in units, pound or tons) of goods traded. Analyses based on unit values must generally be treated with caution since product differentials, quality differences or variations in type may be reflected as price differences. However, for homogenous five-digit Standard International Trade Classification (SITC) iron and steel products the influence of these other factors should be relatively minor. In fact, studies by Stigler and Kindahl (1970), McAllister (1961), and others have used iron and steel unit values to assess the accuracy of wholesale price quotations employed by the United States Bureau of Labor Statistics.

Table 1

## The Value and Destination of French Iron and Steel Exports (SITC 67): 1962 to 1987

Year	French Iron and Steel Exports (SITC 67)			Share of All French Iron and Steel Exports Destined For Different Country Groups (%) <sup>2/</sup>							
	All Products (\$million)	Sampled Products <sup>1/</sup> (\$million)	Sampled Products Share (per cent)	Developed Countries			Developing Countries				
				All Developed Countries	of which:		Total Less French Associates	of which:		French Associates <sup>3/</sup>	Socialist Countries
				EEC(10)	EFTA	Latin America	Asia				
1962	786.8	461.1	60.0	68.4	48.0	11.4	12.7	4.7	2.9	11.7	6.0
1965	966.4	556.6	57.6	74.7	46.4	11.2	13.3	4.0	3.5	7.8	3.6
1968	1,013.1	561.0	55.3	73.9	48.0	9.7	10.7	3.7	2.0	8.2	6.0
1971	1,532.1	814.0	53.1	77.6	48.8	9.0	10.5	3.3	2.2	7.0	4.4
1974	3,978.5	2,181.6	54.8	73.8	48.4	8.4	11.2	3.1	1.4	7.2	6.8
1977	4,279.3	1,938.3	45.2	68.8	46.4	5.7	12.3	3.4	1.5	8.8	9.3
1980	7,290.0	3,035.2	41.6	69.9	51.7	6.8	14.4	5.0	2.5	7.5	8.0
1983	4,854.1	1,933.9	39.8	69.0	46.4	6.3	15.2	3.3	4.7	6.4	7.4
1986	6,152.5	2,446.5	39.8	75.7	53.0	6.2	12.2	2.7	4.1	4.8	7.1
1987	6,642.7	2,619.0	39.4	76.9	53.8	6.3	11.7	2.4	3.9	3.6	6.6

<sup>1/</sup> The sampled iron and steel products consist of the four and five-digit SITC products listed in appendix tables 3 to 13.

<sup>2/</sup> The developed, developing and socialist country trade shares may not sum to 100 since some French exports are unallocated in terms of final destinations.

<sup>3/</sup> These countries consist of Tunisia, Morocco, Guinea, Madagascar, Ivory Coast, Central African Republic, Chad, Niger, Senegal, Mauritania, Mali, Algeria, Burkina Faso, Cameroon, Gabon, Congo, Togo, Benin, Reunion and Mauritius. The declining importance of these countries as a destination for France's iron and steel exports is due primarily to major reductions in France's share of the associate's total iron and steel imports. An additional factor was that the growth in total import demand in these countries generally lagged well below that of other regions. See Appendix Table 1 for statistics on France's share of the associated countries iron and steel imports over 1962-1985.

other countries like Belgium, Portugal or the United Kingdom. 5/

For the basic data employed in this study, annual value and quantity information were drawn for every five-digit Standard International Trade Classification (SITC) iron and steel product exported by France over 1962-1987 and unit values were computed for these shipments. In addition, similar statistics were drawn for several higher level products (four-digit SITC) where more detailed disaggregate data were not available. An effort was made to hold the four-digit items to a minimum, however, since their unit values can be affected by product-mix differences. In cases, several products had to be excluded from further analysis when tests showed they were only exported to a limited number of countries, or when full 1962-87 value and quantity data were not available. Altogether, this left 11 distinct four and five-digit SITC steel products for further analysis that composed 40 to 60 per cent of all French iron and steel exports over the 25 year period (see Table 1).

While detailed unit value information on each of these products is presented in the appendix, several summary statistics were used in connection with this data. First, an attempt was made to estimate the size of any overall price margins French associated countries may have paid over or under other exporters ( $M_{f,g}$ ) from the following :

$$(2) M_{f,g} = \Sigma \left( \frac{V_{if}}{Q_{if}} \times \frac{Q_{ig}}{V_{ig}} \right) \times \frac{V_{if}}{V_{Tf}}$$

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5/ By comparing the various 'European countries' share in the trade of former colonial associates with similar data for a control group of developing countries, Kleiman (1976) develops an index which shows the extent to which trade is greater (more intense) than would be expected due to relative shares in world trade. The results suggest that former colonial associates' exports to, and imports from, the United Kingdom were three times the normal level for developing countries, while similar ratios for the French associates were about eight times higher. Results for the Italian, Belgium and Portugese colonies suggest they were even more trade dependent than the French associated countries. The Kleiman approach may be useful for analyzing relations between other groups of countries (say between the U.S. and Latin America) to determine if similar high trade intensities exist.

where  $V_{if}$  and  $V_{ig}$  are the value of shipments of product  $i$  to the French associates and a group of other countries, respectively, while  $Q_{if}$  and  $Q_{ig}$  are export quantities. In equation (2),  $V_{Tf}$  is the total value of the sampled iron and steel shipments to the associated French countries within a specific time interval. 6/ As such, the equation computes an average associated country price premium or discount weighted by the value of imports of each iron and steel product. Next, a second measure of the economic costs (or benefits) of these price differentials ( $E_f$ ) derived from:

$$(3) E_f = \sum (U_{if} - U_{ig}) \times Q_{if}$$

where  $U_{if}$  and  $U_{ig}$  are the French associates and other countries' unit values for the imported product. By taking the difference between the associate and other countries' unit value, times the quantity of imports, this equation computes how much more (or less) the former pay for their imports of the product. These calculations are then summed over all iron and steel imports. Equation (3) is expressed both in terms of actual current values as well as the present value of any over or underpayments in the past. 7/

Aside from evaluating the overall magnitude of the unit value differences on total import payments, correlation tests were employed to

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6/ See the footnotes to Table 2 for a listing of the countries that have been classified in the French associated country group. Equation (2) computed the aggregate price differential that French associates pay (positive or negative) over other countries weighted by the value of shipments to the former. The results are presented for two year time periods in an attempt to smooth out the effects of any unrepresentative trade values that might influence annual figures.

7/ For example, if the French associates made an apparent over payment of (say) \$100,000 five years in the past, the present value of that over payment would be considerably higher since it includes foregone interest earnings. The appendix tables provide estimates of the present values of any implied over payments or discounts (equation 3) paid by the French associates on their steel imports over 1962-87. In these computations a discount rate of 8 per cent has been assumed. The reader should also note that any apparent discounts would lower the present values reported in these tables.

determine if they were systematically linked to several possible explanatory factors. To evaluate the influence of geographic concentration of imports by each African country -- a variable that would reflect a situation that could lead to the abuse of monopoly power -- variables were tested which measured the share of iron and steel supplies originating in the largest, and three largest exporting countries. <sup>8/</sup> While these measures parallel the concentration ratios used in structure-performance studies of domestic markets, there is a special problem in that similar (equal) ratios can mask different distributions of competing firms. In support of the country ratios, however, is the fact that firms headquartered in the same exporting nation may have a tendency to participate in cartel arrangements or collusive oligopoly decisions on foreign prices. Also, iron and steel production is generally among the most concentrated of industries in developed countries so the potential number of exporting firms is limited. During the 1962-1987 period which is the focus of this study there appear to have been only 3 or 4 firms producing the (sampled) French steel products for export, and during various sub-intervals the links between these companies were reinforced by nationalization.

Two variables were employed to test the relation between the size of the export shipments, or the export market, and the pattern of relative prices. First, the relative quantity (tons) of each country's iron and steel

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<sup>8/</sup> Concentration ratios, such as the share of imports received from the largest or three largest suppliers are statistical measures which show the per cent of sales controlled by a given number of the largest firms. For a discussion of the use, and problems with measures of market concentration see Adelman (1951), Prais (1958) or Scherer (1970). Numerous studies of domestic markets in developed and developing countries have consistently shown that firm prices and profits are (positively) linked to the level of market concentration. Since the country ratios are employed as proxies for the geographic concentration of suppliers, this variable tests whether the normal structure-performance relation also holds for international markets.

imports from France was computed to determine if larger shipments were associated with lower import prices. In addition, the absolute size of each nation's total imports from all sources was tested. Analysis of results from these variables might indicate whether there are economies of scale associated with larger shipments, or whether French pricing policies are different for large export markets where countervailing power may be influential. <sup>9/</sup>

Other variables employed in these tests include the number of alternative (country) suppliers of iron and steel to determine if a large variety of contacts, and potentially greater sources of information on competitive prices, are related to unit value differences. Also, since Hufbauer and O'Neill (1972) found that quality differences in imports of machinery are positively associated with real income, each country's GNP per capita was also tested as an explanatory variable. Finally, a dummy variable was used to designate transactions between France and another developed country while a second dummy was used for shipments between France and a former colonial associate.

### III. The Empirical Findings

Table 2 makes some initial comparisons of the relative prices paid by the French associated and other developed and developing countries over the 1962-87 period. The table shows the value of the former's imports of the sampled four and five-digit SITC products and also indicates the average unit value for these goods. In addition, the premium (a positive figure) or

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<sup>9/</sup> An attempt to determine if price differentials result from scale economies, or the pricing policies of French exporters, requires a more exhaustive analysis than is conducted in this study. However, identification of a relationship between prices and size has similar policy implications, whichever factor is the basic cause. That is, if such a relation is found (and is strong) it may be appropriate for smaller country to consider consolidation of orders or even joint purchase arrangements with neighbors.

discount (a negative entry) that the French associates pay over other groups

Table 2

Comparative Unit Value Information for France's Exports of Iron and Steel Products

Year	French f.o.b. exports to associated countries		Premium or Discount Paid by French Associated Countries 1/				
			Total 2/	All Developed	Developing Countries		
					All Non-French	Latin America	Middle-East
Value (\$000)	Unit Value (\$)						
1962-63	118,446	167.0	37.9	40.5	36.9	26.8	50.6
1964-65	98,593	151.5	27.5	29.8	21.8	20.4	23.5
1966-67	86,042	143.8	24.6	26.8	21.0	21.6	18.9
1968-69	101,180	150.0	28.5	31.3	23.9	32.7	14.2
1970-71	119,695	199.30	29.6	32.6	16.7	13.3	13.0
1972-73	187,362	234.80	23.0	26.9	18.6	22.0	16.6
1974-75	368,537	386.70	18.1	26.4	8.1	16.7	17.2
1976-77	341,378	375.80	13.1	20.4	-3.6	10.2	2.9
1978-79	465,702	496.60	19.5	19.8	26.1	24.1	12.1
1980-81	489,195	581.20	25.4	28.6	20.9	26.3	-11.2
1982-83	350,566	458.30	6.6	8.3	8.6	6.0	-13.8
1984-85	318,623	442.90	17.4	15.7	36.2	34.2	16.8
1986-87	269,537	668.00	40.1	37.0	66.5	54.7	10.9

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....431,169.0

Present value of gains or losses 4/...876,183.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Note: See Appendix Tables 3 through 13 for the four and five-digit SITC products included in these computations.

of developed or developing countries is given. Appendix Table 3 through 13 provides similar information for each of the sampled iron and steel products.

The statistics in Table 2 strongly suggest that the French associated countries are paying in excess for their imports whether the comparisons are made between other developed or developing countries. For the full 26 year period, the French associated unit values always exceed those of developed market economy countries (their average premium for this period was approximately 24 per cent), while in only one two-year period (1976-77) did the associates' price fall below that for all other developing countries. Even with this one reversal of the normal pattern, however, the French associates still paid an average premium of 23 per cent above the unit value for other developing countries over the full 1962-87 period.

Table 2 summarizes the implications of these findings by computing the excess associated countries' costs due to their prices exceeding those paid by all other developing countries (see equation 3). In deriving these results the computations were made for each of the sampled iron and steel products (see appendix Tables 3 through 13) and then aggregated to the figures shown in the Table. In total, the French associates' price premiums over all developed countries are positive for each two year intervals over 1962 to 1987 and range from 8.3 per cent in 1982-83 up to 40.5 per cent in 1962-63. In general, the premiums over other non-French associated developing countries follow the same pattern, but are somewhat lower. Table 2 shows that the present value of the dollar losses associated with the premiums the associates paid over other developing countries was close to \$900 million by the end of

1987. 10/ However, these results apply only to the sampled steel products (see Appendix Tables 3 to 13) and, if the same pattern holds for all iron and steel shipments the present value of the associated losses on imports from France approximately would be \$2 billion. 11/ This extrapolation is based on the assumption that the same average price premiums are paid for both sampled and nonsampled products. The importance of this (\$2 billion) figure is highlighted by the fact that it exceeds the long-term debt of 12 of the associated countries in 1987 and is approximately equal to the debt of the Central African Republic, Chad, Burkina Faso and Mauritius (\$2.2 billion).

While the previous analysis examined relative French unit values in the aggregate, Table 3 shows the average premiums or discounts paid by individual associated countries for all imports of sampled iron and steel products. For the full 1962-87 period the individual country premiums average

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10/ The actual dollar losses reported in Table 2 are the summation of the implied losses in each two year period up to and including 1987. The present value of these losses include their actual value and the interest that would have been earned on each years excess payments up to 1987. In calculating the present value a discount rate of 8 per cent was employed as this appeared to be a close approximation to the average for the 1962-87 period. It should be noted that when the French associates received an apparent discount, as in 1976-77, this was recorded as a negative entry in both the actual cost and present value calculations.

11/ One key question relates to whether the excess pricing pattern observed for iron and steel products also applies to other sectors. There is some tentative evidence in support of this proposition. Yeats (1978, p. 178) compared four-digit SITC product unit values for all French shipments to selected associated and non-associated African countries over 1962-1969 and found that the former averaged between 13 to 18 per cent higher. Assuming that this excess price margin applies to all manufactured imports would mean that the associates were overcharged by approximately \$25 billion. A second important point is whether the associates suffered additional losses due to institutional factors that kept them from dealing with an alternative supplier (say Japan) whose prices were generally below the average French export prices. One way to test this hypotheses would be to substitute alternative suppliers' unit values for  $U_{ij}$  in equation (3) and recompute the associates' gains or losses.

Table 3

Comparative Analysis of Associated Countries Iron and Steel F.O.B. Import Prices from France  
(All Sampled Iron and Steel Products)

Importing Country	Average Unit Value Relative to Non-French Countries (per cent) 1/													
	1962-63	1964-65	1966-67	1968-69	1970-71	1972-73	1974-75	1976-77	1978-79	1980-81	1982-83	1984-85	1986-87	Average 1962-87
Tunisia	15.1	31.3	45.8	48.5	68.4	46.0	42.4	22.1	31.9	18.3	-1.6	15.0	66.0	35.0
Morocco	14.1	6.9	-2.1	4.7	3.2	3.5	0.3	0.9	10.9	0.7	-14.6	-5.6	17.0	3.1
Guinea	43.8	55.0	59.2	38.6	45.5	66.0	51.0	29.2	30.8	45.7	49.4	36.6	34.4	45.0
Madagascar	22.1	31.9	26.5	18.3	12.9	-0.3	8.5	4.2	15.3	35.5	18.4	19.5	40.2	19.5
Cote d'Ivoire	28.2	27.8	34.7	28.8	16.0	5.9	8.0	0.5	0.2	40.0	8.0	17.4	36.9	19.4
Central African Rep.	29.8	26.7	28.0	19.9	13.1	11.3	-0.8	1.6	26.8	4.4	5.7	29.0	60.4	19.7
Chad	19.7	36.0	30.2	23.8	10.4	26.6	6.7	9.8	18.9	15.9	10.1	34.1	75.5	24.4
Niger	17.4	41.4	14.6	29.0	34.6	15.1	9.6	20.3	41.9	47.7	12.2	73.1	100.5	35.2
Senegal	21.5	22.8	23.2	17.2	9.8	7.2	5.6	-3.2	6.9	12.4	2.3	21.8	52.3	15.4
Mauritania	28.3	60.0	49.0	36.3	35.3	35.7	35.0	20.4	62.9	30.8	27.1	48.4	132.6	46.3
Mali	28.7	32.0	73.8	57.1	46.8	10.8	7.6	8.8	10.1	9.9	-2.5	-2.4	16.3	22.8
Algeria	77.9	41.0	43.6	50.5	70.8	60.7	33.2	135.9	65.2	58.3	18.1	27.0	22.9	54.2
Burkina faso	29.6	29.6	37.1	27.8	12.0	21.6	5.6	6.3	-1.0	2.8	-2.8	-1.0	10.7	13.7
Cameroon	30.8	46.2	44.0	34.2	22.7	8.8	18.0	9.2	23.3	38.2	19.4	20.8	78.0	30.3
Gabon	51.2	49.4	63.8	60.5	58.6	47.5	55.2	5.5	55.9	33.7	28.4	22.4	81.3	47.2
Congo	27.3	50.4	48.6	20.4	25.9	32.7	10.4	-0.8	22.0	20.6	40.7	46.8	97.0	34.0
Togo	17.2	21.0	11.7	2.7	-1.0	-4.2	-5.9	-14.3	-3.0	18.5	11.0	25.8	69.9	11.5
Benin	36.1	22.4	33.4	11.7	1.9	2.8	3.2	-3.5	1.9	24.0	44.0	20.5	79.6	21.4
Reunion	18.2	20.9	20.6	24.2	13.2	9.4	-1.5	-1.5	10.6	14.4	8.1	26.4	55.5	16.8
Maritius 2/	na	-8.2	-17.7	-2.7	21.1	42.2	60.4	66.1	na	na	na	24.9	na	23.3
Weighted Average French Associates	37.9	27.5	24.6	28.5	29.6	23.0	18.1	13.1	19.5	25.4	6.6	17.4	40.1	26.9

1/ The price relative for associated country i ( $R_i$ ) is measured by:

$$R_i = (U_j - U_0) \div U_0 \times 100$$

where  $U_j$  and  $U_0$  are the average French associate and other countries' unit values for the sampled iron and steel products.

2/ For some specific years low import volumes precluded computation of a unit value relative.

close to 27 per cent, but some of the lowest values were recorded for 1974-77 and 1982-83. However, the most striking point to emerge from Table 3 concerns the wide range in average premiums paid by the associated countries. For example, over the 26 year period these premiums averaged 3.1 per cent for Morocco, but for Mauritania, Algeria and Gabon they were at least 15 times greater. Subsequent correlation tests (see Table 4) will show that these individual country differences are significantly (inversely) related to the size of the importing market and the number of trade contacts it maintains.

#### IV. Correlation Analysis of Unit Value Differences

For policy purposes a key question is why there are such major differences between the f.o.b. export unit values for different countries of destination. Since these items (five-digit SITC steel products) are generally homogenous in nature, differences in product characteristics should have a fairly limited influence on unit values (prices). In an attempt to account for these differences, French relative export prices (i.e., the unit value for the individual importing country relative to the average unit value for the product group) were correlated with various market structure and other performance variables which might be expected to influence relative prices. Table 4 summarizes these results for 1968-69 period and also shows similar correlation results for 1986-1987 in order to determine how the relationships between variables evolved over time.<sup>12/</sup> To assist in evaluating this

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<sup>12/</sup> An earlier period like 1962-63 was not selected for the correlation tests since 1968-69 provided an interval in which France had considerably broadened trade contacts among other developed and developing countries. This provided a large base and range of country characteristics for which price comparisons could be made. The period 1986-87 was selected to provide the widest possible interval for the intertemporal comparisons of correlation results. Since Table 2 shows that the associate country price margins were within normal ranges, there is no reason to believe that the correlation results would differ significantly if other periods had been selected.

Table 4

Correlation Analysis Between Iron and Steel Relative Import Prices and Selected Explanatory Variables: 1968-69 and 1986-87 a/

Independent variables	Relative price		Market structure variables				Market size variables				Dummy variables			
			No. of trade contacts		Share of 3 largest suppliers		Relative quantity		Total imports		Associated countries		Developed countries	
	1968-69	1986-87	1968-69	1986-87	1968-69	1986-87	1968-69	1986-87	1968-69	1986-87	1968-69	1986-87	1968-69	1986-87
Number of contacts	-0.448*	-0.564*												
Share of 3 largest countries	0.384*	0.472*	-0.762*	-0.569*										
Relative quantity	-0.134	-0.708*	0.355*	0.711*	-0.150	-0.510*								
Total imports	-0.157	-0.626*	0.474*	0.831*	-0.219*	-0.471*	0.842*	0.817*						
Associated country group	0.604*	0.447*	-0.778*	-0.671*	0.680*	0.407*	-0.216*	0.507*	-0.377*	-0.753*				
Developed country group	-0.200*	-0.633*	0.593*	0.5588	-0.441*	-0.423*	0.454*	-0.717*	0.598*	0.688*	-0.515*	-0.635*		
GDP per capita	-0.287*	-0.572*	0.560*	0.727*	-0.385*	-0.466*	0.575*	0.755*	0.716*	0.820*	-0.517*	-0.745*	0.799*	0.748*

a/ Asterisk (\*) indicates statistical significance at the 99 per cent confidence level.

information, results which are significant at the 99 per cent confidence level have been marked with an asterisk. The immediate impression that one gets from Table 4 is that the nature of the relationships have changed little over this extended time period (although many of the 1986-87 correlations appear stronger than those for the earlier period). That is, the variables that had an important influence on prices and market structure in 1968-69 also had an important similar influence in 1986-87. 13/

As shown in the first column of the table, five explanatory variables had a significant influence on relative French export prices in 1968-69 with all of the variables being significant in 1986-87. As is the case with industrial country market studies, variables relating to market structure appear to exert a key influence on relative prices. For example, a highly significant positive relation ( $r = 0.384$ ) exists between relative prices and the per cent of imports controlled by the three largest supplying countries in 1968-69 and the relation was even stronger ( $r = .472$ ) in 1986-87. Thus, those nations which are heavily dependent on a relatively few suppliers pay for this

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13/ When the seven independent variables shown in the left hand column of Table 4 were combined in a regression against relative import prices (P) the following results were obtained for 1968-69:

$$P = -0.264 - 0.028N + 0.621S - 0.002Q + 0.001I + 0.023A - 0.050D - 0.001G$$

(2.521) (3.437) (2.109) (1.428) (2.646) (0.570) (2.671)

where N is the number of contacts, S is the share of the three largest suppliers, Q is the relative quantity variable, I is total imports, A is a dummy variable taking a value of one for associated countries, D is a developed country dummy, and G is the importing countries per capita GNP and t values are shown in parentheses. The coefficient of determination ( $R^2$ ) for this equation was 0.51. When the same equation was run for the 1986-87 period the coefficient of determination rose slightly to 0.56. However, the independent variable regression coefficients for both years must be regarded with caution since there is evidence of a high degree of multicollinearity in the data.

reliance through higher import prices. 14/ Another result which highlights the importance of market characteristics is the significant inverse association that exists in both time period between relative prices and the number of trading partner (country) contacts. Thus, those importing countries maintaining trade relations with a larger number of exporters, and theoretically benefiting from greater competition and information on comparative prices, pay less for their exports. Unfortunately, from the view of development policy, there is evidence that the smaller, poor countries may not be able to sustain a larger number of trading contacts since this variable was significant and positively correlated with GNP per capita, market size, relative quantities purchased and the developed country dummy. 15/ Thus, developing countries acting in isolation (i.e. not resorting to practices like combined bulk purchasing) may not be able to maintain the trade contacts and other market conditions leading to lower import prices.

Somewhat surprisingly, the 1968-69 correlations fail to show a strong association between relative prices and either of the market size variables, although both these variables are significant with the expected (negative) sign in 1986-87. While import prices are negatively correlated with both the

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14/ As might be expected a strong inverse correlation exists between the number of trade contacts and the share of the three largest suppliers. That is, countries with relatively few contacts typically receive a higher percentage of total imports from three major exporting countries.

15/ Some practices of developed countries, like the "tying" of international aid, may strongly reinforce the negative structure (monopoly) elements present in developing countries' import markets. Specifically, tied aid requires that recipient countries make purchases from domestic firms headquartered in the donor nation. Knowing that the country receiving tied aid cannot turn to other bidders, suppliers in the donor country have no incentive to engage in competitive international bidding. The practice of tying aid may be an important reason for the sizeable and persistent premiums that the associated countries' paid over 1962-1987.

relative (five-digit) 1968-69 quantities purchased and total imports, these associations fail to achieve statistical significance at the 99 per cent level (both are in fact significant at a 95 per cent confidence level). Thus, market size may have a relatively minor direct influence on price in 1968-69 as compared to the structure variables and related competitive factors. However, the indirect effects of size appear important in both periods since Table 4 shows this variable is correlated with market structure which, in turn, influences market prices. Aside from these relations, the correlations between relative prices and the association dummy are among the strongest in the table for both 1968-69 and 1986-87. This suggests that the special relations between French producers and the associated countries (see Appendix 1) isolates the former from active competition and allows prices to rise above levels dictated by market structure. As such, it would seemingly benefit the associated countries to encourage alternative trade contacts, or adopt policy measures aimed at increasing competition in their import markets. However, they may be deterred from doing this by practices such as tying aid, or by the small size of their import markets.

While the correlations between relative prices and the explanatory variables are the primary focus of this analysis, some of the intercorrelations between the independent variables are also of interest. For example, there appear to be a number of specific factors working against a more favorable price position for the associated countries. Specifically, Table 4 shows that these nations had significantly fewer trade contacts in both time periods, are generally smaller markets and also have significantly higher concentration ratios. All of these factors undoubtedly contribute to higher import prices. Conversely, the developed countries have less concentrated markets, as well as a larger number of trade contacts. Thus,

certain internal characteristics of each country group appear to have an important influence on relative prices.

V. Additional Evidence on the Extent of Discriminatory Pricing

While the previous analyses focussed solely on the pricing practices of French enterprises, a question of obvious importance is whether or not other industrial countries' firms have adopted similar policies. For a test of this proposition, f.o.b. unit values were computed for the United Kingdom's exports of major iron and steel products to former African colonies (Kenya, Uganda, Tanzania, Sudan, Nigeria, Gambia, Sierra Leone and Ghana) as well as to all other developing countries. Next, similar computations were made for Belgium (with Burundi, Rwanda and Zaire designated as colonies) and Portugal (Angola and Mozambique). These data were then used to compute the average premium or discount that the Belgium, Portugal or United Kingdom colonies paid over the 1962-1987 interval. These figures, as well as similar statistics for the French colonies, have been summarized in Table 5.

Over the full 1962-87 period the average premiums paid by the former Belgium and French colonies are remarkably close (23.7 and 23.2 percent, respectively) while the former United Kingdom associated paid a slightly lower premium of 20.0 percent. The same pricing pattern emerges during 1962-75 for Portugal's exports to former colonies, but from 1976 on the premiums more than tripled and averaged over 120 percent. It appears that the hostilities in Angola were a major factor behind this dramatic rise as domestic firms may have employed excess pricing as a means of transferring resources out of the country. However, as far as policy implications are concerned, the statistics in Table 5 are important since they show that the problem of "overpricing" of imports is widespread among African countries.

VI. Summary and Policy Implications

Using techniques which have been employed for analysis of domestic market performance in industrial countries, this study examined the pattern of France's iron and steel export prices over an extended period 1962-1987. The findings parallel those for the industrial organization investigations. Typically, international markets which are more concentrated, or which rely on a smaller number of trade contacts, bear higher prices. Also, the magnitudes of these excess prices are such as to have important policy implications. For example, had the associated French countries not paid the overall premiums indicated in Table 3, this would have resulted in a saving of foreign exchange with a present value of close to \$1 billion in 1987. If the same pattern of excess prices applied to all (i.e., sampled plus other steel imports) the associates' imports the magnitude of the savings would approximately double. It should be noted that these figures relate solely to iron and steel shipments and a key question is whether excess price margins also apply to other capital goods imports. Bearing on this last point is the fact that "trade intensity ratios" are lower for most associated countries' iron and steel products than they are for other items (see appendix table 2). This would appear to establish a precondition where such excess pricing could be generalized although more research is needed to establish its definite existence.

Table 5

Comparative Analysis of the Premium on Discount Charged by Selected European Countries on Iron and Steel Exports to Associated African Countries

<u>Year</u>	<u>Average Premium or Discount Charged Associated Countries</u> <sup>1/</sup>			
	<u>Belgium</u> <sup>2/</sup>	<u>France</u> <sup>3/</sup>	<u>Portugal</u> <sup>4/</sup>	<u>United Kingdom</u> <sup>5/</sup>
1962-63	20.7	36.9	12.7	4.0
1964-65	21.2	21.8	37.3	8.8
1966-67	25.7	21.0	25.6	14.4
1968-69	19.1	23.9	29.9	12.4
1970-71	15.2	16.7	43.7	13.0
1972-73	18.0	18.6	18.7	15.5
1974-75	26.4	8.1	42.9	9.9
1976-77	35.3	-3.6	6/	22.5
1978-79	37.0	26.1	6/	15.1
1980-81	17.1	20.9	6/	19.2
1982-83	25.5	8.6	6/	36.5
1984-85	16.0	36.2	6/	37.9
1986-87	31.5	66.5	6/	53.0

1/ Based on the four and five digit SITC products listed in Appendix Tables 3 through 13. The average premium or discount has been calculated relative to the average unit value for each product paid by other developing countries.

2/ Burundi, Rwanda and Zaire comprise the associated country group.

3/ See Table 3 for a list of countries classified as French associates.

4/ Angola and Mozambique comprise the associated country group.

5/ Countries classified as United Kingdom associates are Kenya, Uganda, Tanzania, Sudan, Nigeria, Gambia, Sierra Leone and Ghana.

6/ From 1976-77 to 1986-87 the premiums on Portugal's exports rose dramatically and averaged over 120 percent. It appears likely that the hostilities in Angola were a major factor causing the large increase in premiums over those which prevailed during 1962-63 to 1974-75.

From the viewpoint of development policy, several of the direct and cross correlations shown in this study (Table 4) are quite important. For example, relative prices are seen to vary with market size. This suggests that there may be some economies of scale associated with larger shipments, so that countervailing power may be a factor. However, the indirect effects of size on prices may be even more important since a strong inverse correlation exists between this variable and market concentration. <sup>16/</sup> Thus, market size apparently produces structural features which influence both the level of competition and prices.

While further research is needed concerning the influence of size on relative prices, a question of key importance is why the pattern of price relatives documented in this study exists, and has persisted over such an extended interval. <sup>17/</sup> As was noted, the excess prices margins are fully consistent with both economic theory on the functioning of markets and results

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<sup>16/</sup> In a related study dealing with unit values of United States machinery exports, Hufbauer and O'Neil (1973) find evidence of a strong direct relation between size and relative prices. For example, they suggest (p. 272) that "A noteworthy feature of the regression analysis is the strong and highly significant effect of the quantity variable. Whether the elasticity of  $-0.23$  reflects price discrimination based on orthodox monopoly consideration, we cannot say. In any event, the quantity effect means that a small importing country pays a much higher price for its machinery" (*italics added*).

<sup>17/</sup> There are several lines that this research might take. First, it would be useful to extend the procedures developed in this study to other types of homogenous products (i.e., glass, cement, nonferrous metals, etc.) to see if further evidence of discriminatory pricing exists for these items. Second, trade intensity and other structural variables (see appendix 1) could be computed for a large number of bilateral trade flows and the results used to "flag" outliers (countries) which may be subject to the abuse of monopoly pricing power. The procedures used in this study might then be applied to these specific countries to test for evidence of monopoly pricing. Third, the procedures should be applied to homogenous goods exported from developing countries to determine if they may be receiving less than competitive prices for this trade.

from investigations of markets where monopoly elements exist. However, it was not possible within the scope of the current investigation to identify the precise factors that were adversely affecting the African countries. Among the possibilities are: the relatively small size of their markets, a point that could be important if there are economies associated with large orders; the influence of tied aid and other factors like established lines of international transport that limit access to more competitive suppliers; a lack of access to information on prices of more competitive suppliers; the use of "agreed" overpricing to facilitate graft and corruption; or the established business practices of subsidiaries of foreign firms in the African countries.<sup>18/</sup> Definitive information on the relative importance of such factors will require a detailed analysis of the procurement practices and problems of African importers.

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<sup>18/</sup> A recent study by Kreinin (1988) shows that subsidiaries of foreign firms purchase from the parent company even when other international traders were offering goods of equal quality at lower prices. This tie between subsidiaries and the parent was particularly strong for Japanese enterprises which almost exclusively relied on the Japanese parent for imports. It would be useful to undertake similar research on the purchasing practices of foreign subsidiaries in the developing African countries to determine if intra-firm practices were an important explanatory factor for the large and persistent price premiums.

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Appendix 1

Bilateral Trade Intensity Ratios, Trade Concentration Ratios  
and France's Share of Associated African Markets

1962 to 1985

This appendix presents summary statistics relating to market shares, trade intensity ratios and indices of import concentration in the French associated countries' markets. Appendix Table 1 shows the share of France in the associates' total imports of iron and steel products (SITC 67) as well as all goods for selected years over 1962-1985. <sup>1/</sup> The table also gives an "intensity" of trade index ( $I_{ij}$ ) defined as the share of country i's (France) exports to associate country j ( $X_{ij}/X_i$ ) relative to the share of j's imports ( $M_j$ ) in world imports net of i's imports ( $M_w - M_i$ ). That is,

$$(6) \quad I_{ij} = \frac{X_{ij}}{X_i} \div \frac{M_j}{M_w - M_i}$$

The index can take values between zero and infinity with values above unity indicating a greater intensity of trade between two countries that can be accounted for by the countries' importance in world trade. That is, a value of two would indicate that the intensity of trade between countries was twice as great as what would be expected on the basis of their importance in world trade.

Appendix Table 2 provides statistics on the concentration of associate countries' iron and steel imports from alternative major suppliers. A three country import concentration ratio ( $C_{3j}$ ) was computed from,

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<sup>1/</sup> While statistics on France's exports to the associated countries are available for the full 1962-1985 period, some of the associated countries did not report their imports for specific years (i.e., Algeria 1982, Benin 1975, Guinea 1962-1985, etc.). For this reason France's share and the trade intensity ratios could not be computed for these years.

$$(7) C_{3j} = (M_{3j} + M_{Tj}) \times 100$$

where  $M_{3j}$  is the value of associate country  $j$ 's iron and steel imports from the three largest supplying countries and  $M_{Tj}$  is the total value of imports. In addition, the Hirschmann concentration index ( $H_j$ ) was also computed,

$$(8) H_j = \sqrt{(\sum X_{ij} \div X_j)^2}$$

This index may take values ranging from zero to unity with the higher numbers indicating more concentrated markets. 2/ To assist in evaluating these indices, similar statistics have been computed for the total imports of all developed and developing countries as well as for Brazil, U.S., U.K. and the Federal Republic of Germany.

Two major points clearly emerge from these indices. First, the bilateral trade intensity ratios indicate that France has maintained a dominant position in almost all the associated countries' markets (Mauritius is an exception) throughout the 1962-85 period although many of the ratios appear to be on a declining trend. Still, in 1985 iron and steel exports from France to Burkina Faso, Central African Republic, Chad, Gabon, Guinea,

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2/ Market structure indices like equations (7) and (8) have been used extensively in structure-performance studies of domestic markets of industrial countries where they are based on individual firm's shipment, sales, employment or production data. There is a potential problem in applying these measures to national trade data in that similar measures for different countries may mask very different distributions of competing firms. That is, a high ratio derived from national trade data may be a misleading indicator of the actual level of competition if there are a large number of (national) competing firms. In OECD countries, however, there are relatively few iron and steel firms (some of which are nationalized) so this should not be a major problem for the current study.

Madagascar, Reunion and Senegal were five times or more what would be expected on the basis of the respective sizes of these countries in world trade. 3/ Second, Appendix Table 2 clearly shows that the markets of the associated countries for iron and steel imports remain far more concentrated than those of developed or developing countries although the market structure indices are falling from their very high levels of the early 1960s. Still, by 1985 the three largest supplying countries control 70 per cent or more (over 90 per cent in the case of Chad and Reunion) of the associates' imports. In industrial market studies such very high levels of concentration have consistently been found to be associated with higher seller prices and profits.

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3/ The fact that 14 of the 20 countries have higher bilateral trade ratios for all imports than for iron and steel in 1985 suggest that "overpricing" may in fact extend beyond this one sector to all goods. Yeats (1978, Table 4, p. 178) provides some evidence in support of this contention by showing that the average unit values for all four-digit SITC products imported by selected associate countries from France are consistently higher than those of other African countries.

Bilateral Trade Intensity Indices and the Shares of France in Associated Countries Imports: 1962 to 1985

Country/Product Group	Share of France in Associates' Imports (%)						French-Associate Bilateral Trade Intensity Ratio						2/ 1/
	1962	1965	1970	1975	1980	1985 1/	1962	1965	1970	1975	1980	1985 1/	
	Algeria - Iron & Steel	na	60.1	28.0	20.8	12.3	17.4	na	4.35	2.36	2.06	1.04	
All Items	na	70.4	42.4	33.5	23.2	26.0	na	11.00	6.24	4.85	3.57	4.41	
Benin - Iron & Steel	71.4	61.2	37.6	na	33.0	25.7	4.43	4.43	3.17	na	2.78	2.57	
All Items	59.3	54.8	42.2	na	25.2	27.4	9.88	8.56	6.20	na	3.87	4.13	
Burkina Faso - Iron & Steel	83.1	89.1	49.2	64.0	72.5	50.5	5.16	6.46	4.15	6.33	6.12	5.05	
All Items	52.2	53.9	50.7	43.4	39.3	27.9	8.70	8.42	7.45	6.29	6.05	6.44	
Cameroon - Iron & Steel	78.7	89.4	54.0	58.1	58.2	42.4	4.89	6.48	4.55	5.75	4.91	3.66	
All Items	54.5	58.1	50.5	46.3	44.7	42.1	9.08	9.08	7.43	6.71	6.88	6.19	
Cent. Af. Rep. - Iron & Steel	84.3	91.6	59.3	73.3	68.4	81.1	5.24	6.64	5.00	7.25	5.77	7.01	
All Items	60.5	60.9	58.4	57.0	60.7	52.7	10.08	9.52	8.59	8.26	9.34	9.95	
Chad - Iron & Steel	91.9	97.1	47.3	52.3	72.5	86.7	5.71	7.04	3.99	5.17	6.12	8.67	
All Items	53.2	46.4	39.8	40.8	31.0	33.3	8.87	7.25	5.85	5.91	4.77	5.08	
Congo - Iron & Steel	89.8	79.9	55.4	76.4	76.7	44.6	5.58	5.79	4.67	7.56	6.47	4.22	
All Items	67.7	61.2	55.1	49.7	47.8	45.5	11.28	9.56	8.10	7.20	7.35	7.72	
Gabon - Iron & Steel	84.1	91.0	69.7	71.0	56.8	65.4	5.22	6.59	5.89	7.02	4.79	6.54	
All Items	61.9	58.5	56.6	66.9	58.4	54.2	10.32	9.14	8.32	9.70	8.98	9.57	
Guinea - Iron & Steel	na	na	na	na	31.1	58.0	na	na	na	na	2.62	5.80	
All Items	na	na	na	na	32.6	32.3	na	na	na	na	5.01	5.34	
Ivory Coast - Iron & Steel	84.5	76.2	52.7	67.7	63.0	44.9	5.24	5.61	4.45	6.70	5.32	4.25	
All Items	66.7	62.4	46.2	39.1	40.8	32.1	11.12	9.75	6.79	5.67	6.27	5.44	
Madagascar - Iron & Steel	93.1	88.9	59.1	67.1	45.5	78.2	5.78	6.44	4.98	6.63	3.83	7.40	
All Items	74.9	62.5	54.7	40.9	37.6	29.5	12.48	9.76	8.04	5.93	5.78	5.00	
Mali - Iron & Steel	90.0	38.7	43.4	72.4	62.3	46.7	6.21	2.80	3.66	7.16	5.25	4.67	
All Items	39.2	24.1	38.4	34.1	36.3	25.3	6.53	3.77	5.65	4.94	5.58	4.15	

Appendix Table 1 (Continued)

Bilateral Trade Intensity Indices and the Shares of France in Associated Countries Imports: 1962 to 1985

<u>Country/Product Group</u>	<u>Share of France in Associates' Imports (%)</u>						<u>French-Associate Bilateral Trade Intensity Ratio</u> <sup>2/</sup>					
	<u>1962</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985 1/</u>	<u>1962</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985 1/</u>
	Mauritania - Iron & Steel	97.2	90.5	57.6	78.0	81.1	41.4	6.05	6.56	4.86	7.72	6.84
All Items	72.5	44.4	35.7	42.3	34.6	23.8	12.08	6.94	5.25	6.13	5.32	3.90
Mauritius - Iron & Steel	4.9	10.1	0.6	3.0	1.6	10.4	0.30	0.73	0.05	0.30	0.14	1.04
All Items	4.8	5.7	6.9	8.6	10.7	11.8	0.80	0.89	1.01	1.25	1.65	1.93
Morocco - Iron & Steel	75.1	73.8	41.8	50.4	31.7	31.2	4.66	5.34	3.53	4.99	2.68	2.95
All Items	42.7	38.0	31.0	30.4	24.8	22.8	7.12	5.94	4.56	4.41	3.82	3.86
Niger - Iron & Steel	95.0	84.6	73.4	73.5	64.6	30.1	5.90	6.13	6.19	7.27	5.45	3.01
All Items	54.1	53.2	45.8	30.3	39.1	46.2	9.01	8.31	6.74	4.39	6.01	7.57
Reunion - Iron & Steel	92.7	67.7	67.9	80.0	68.7	66.0	5.75	4.90	5.73	7.92	5.80	6.24
All Items	68.8	67.6	62.1	62.6	65.3	65.0	11.47	10.56	9.13	9.07	10.05	11.02
Senegal - Iron & Steel	90.6	90.5	71.5	52.8	71.7	74.1	5.63	6.56	6.03	5.22	6.05	7.41
All Items	65.0	53.1	51.2	41.5	34.1	43.2	10.83	8.30	7.52	6.01	5.25	7.08
Togo - Iron & Steel	51.0	52.2	32.4	30.7	54.8	30.1	3.17	3.78	2.73	3.04	4.62	3.01
All Items	33.5	31.2	29.5	35.1	25.0	19.6	5.58	4.88	4.38	5.09	3.85	3.21
Tunisia - Iron & Steel	70.4	37.3	43.5	59.9	33.5	22.4	4.37	2.70	3.67	5.92	2.83	2.12
All Items	52.2	39.0	34.7	34.4	25.2	27.6	8.70	6.09	5.10	4.99	3.88	4.68

<sup>1/</sup> Since more recent information was not available for Benin, Burkina Faso, Central African Republic, Chad, Gabon, Guinea, Mali, Mauritania, Mauritius, Niger, Senegal and Togo the statistics shown in these columns are for 1983. Since 1985 data were not available for Cameroun the information shown relates to 1986 trade.

<sup>2/</sup> The index represented the share of France in all exports to the associated country divided by the share of France in world trade (see equation 3). A value greater than unity indicates a greater intensity of trade than would be expected based on France's importance in world trade.

Appendix Table 2

Concentration Indices for Associated Countries Iron and Steel Imports: 1962 to 1985

<u>Country</u>	<u>Share of Imports from Three Largest Suppliers (%)</u>						<u>Hirschman Concentration Index</u>					
	<u>1962</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1962</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>
Algeria	99.3	92.1	57.5	62.3	60.0	57.8	0.98	0.86	0.40	0.49	0.39	0.39
Benin	99.9	98.4	93.0	84.2	81.0	72.3	0.82	0.71	0.55	0.51	0.50	0.47
Burkina Faso	99.3	95.0	87.8	88.2	89.2	71.5	0.92	0.83	0.73	0.73	0.73	0.48
Cameroon	95.8	88.9	80.5	84.4	73.6	75.7	0.82	0.77	0.52	0.62	0.64	0.65
Central African Republic	98.7	97.4	92.6	93.0	93.7	88.9	0.87	0.90	0.69	0.70	0.68	0.69
Chad	99.0	98.0	86.9	97.0	88.4	96.2	0.96	0.92	0.63	0.66	0.74	0.68
Congo	97.7	91.4	77.7	84.6	93.2	70.8	0.90	0.79	0.56	0.69	0.79	0.45
Gabon	97.1	96.2	84.6	87.6	86.8	54.1	0.90	0.90	0.66	0.71	0.65	0.67
Guinea	45.7	91.9	96.9	90.8	83.1	70.5	0.75	0.81	0.74	0.60	0.53	0.49
Ivory Coast	96.9	98.2	81.1	88.2	79.5	85.2	0.87	0.79	0.58	0.74	0.66	0.61
Madagascar	98.5	95.0	89.7	95.0	87.0	81.9	0.94	0.86	0.66	0.76	0.63	0.61
Mali	99.9	99.7	98.2	94.5	93.8	74.6	0.97	0.71	0.58	0.69	0.72	0.51
Mauritania	99.9	98.1	82.3	94.7	87.8	86.1	0.97	0.85	0.66	0.86	0.81	0.57
Mauritius	76.7	68.4	64.6	72.1	87.7	87.5	0.88	0.88	0.79	0.78	0.84	0.84
Morocco	97.8	94.6	71.5	76.6	81.3	82.7	0.84	0.84	0.53	0.55	0.53	0.49
Niger	99.3	91.0	95.7	88.1	63.4	64.9	0.98	0.82	0.81	0.74	0.58	0.44
Reunion	98.0	97.2	92.1	98.6	96.4	97.6	0.59	0.43	0.44	0.52	0.55	0.70
Senegal	99.0	95.9	92.5	71.0	89.6	83.8	0.92	0.82	0.71	0.54	0.76	0.60
Togo	91.9	90.9	83.0	79.1	88.6	75.3	0.58	0.82	0.54	0.52	0.62	0.46
Tunisia	93.3	73.1	69.4	82.8	78.8	72.3	0.79	0.49	0.52	0.68	0.50	0.45
<u>Memo Item:</u>												
Brazil	67.4	65.4	67.6	69.7	65.3	64.7	0.41	0.42	0.43	0.46	0.39	0.40
Germany, Fed. Rep.	78.2	67.7	64.2	58.7	53.7	48.7	0.51	0.45	0.43	0.39	0.37	0.33
United Kingdom	38.2	43.3	41.1	44.0	49.5	52.6	0.26	0.31	0.34	0.34	0.35	0.38
United States	52.9	63.8	66.8	67.5	63.6	55.9	0.34	0.45	0.48	0.49	0.44	0.38
All Developed Countries	58.6	49.7	46.6	50.2	46.4	40.2	0.37	0.34	0.33	0.34	0.31	0.30
All Developing Countries	52.6	53.7	60.7	64.1	59.9	57.4	0.37	0.37	0.43	0.47	0.46	0.47

Appendix 2

Comparative Analysis of F.O.B. French Unit Values  
for Iron and Steel Exports: 1962 to 1987

Associated French and Other Developing and Developed Countries

Appendix Table 3

Comparative Unit Value Information for France's Exports of SITC Product 677.01  
(Iron and Steel Simple Wire Excluding Rod)

Year	French f.o.b. exports to associated countries		Premium or Discount Paid by French Associated Countries 1/				
	Value (\$000)	Unit Value (\$)	Total 2/	Developing Countries			Middle-East
				All Developed	All Non-French	Latin America	
1962-63	6,255	168.60	27.2	19.3	40.7	37.2	30.4
1964-65	7,460	174.00	17.3	9.1	32.4	28.3	21.7
1966-67	6,704	178.30	15.9	10.9	34.7	41.4	21.3
1968-69	5,964	183.20	11.3	9.4	29.0	38.0	17.1
1970-71	8,133	221.20	-9.2	-11.2	12.8	25.5	11.3
1972-73	8,938	311.80	4.5	3.8	19.7	39.5	9.0
1974-75	17,629	555.10	10.6	10.5	19.3	13.8	26.1
1976-77	15,019	487.50	-1.4	-2.6	18.0	-0.4	17.6
1978-79	17,903	678.10	11.0	9.1	36.3	37.8	25.9
1980-81	22,549	723.80	3.4	0.4	36.3	0.4	40.1
1982-83	18,976	537.70	-7.5	-14.0	29.3	-22.0	33.2
1984-85	19,817	530.30	-8.6	-9.9	9.8	-50.6	13.4
1986-87	16,165	878.20	14.9	15.9	36.9	-9.7	17.2

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....35,458.0

Present value of gains or losses 4/...79,418.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 4

Comparative Unit Value Information for France's Exports of SITC Product 674.81  
(Iron and Steel Simple Steel Coated)

<u>Year</u>	<u>French f.o.b. exports to associated countries</u>		<u>Premium or Discount Paid by French Associated Countries 1/</u>				
	<u>Value (\$000)</u>	<u>Unit Value (\$)</u>	<u>Total 2/</u>	<u>Developing Countries</u>			<u>Middle-East</u>
				<u>All Developed</u>	<u>All Non-French</u>	<u>Latin America</u>	
1962-63	15,896	213.80	18.2	19.4	41.4	30.0	44.6
1964-65	17,839	224.70	27.6	27.0	43.5	36.9	44.7
1966-67	12,458	234.60	36.9	35.6	58.8	44.0	60.4
1968-69	9,482	218.70	30.8	31.8	48.2	37.0	38.3
1970-71	8,107	219.60	14.2	14.3	27.0	5.5	43.1
1972-73	18,620	295.60	21.5	22.7	27.2	16.9	28.8
1974-75	15,956	387.20	6.9	7.6	13.5	1.5	13.4
1976-77	33,319	467.10	21.7	22.5	28.9	22.6	34.4
1978-79	64,476	606.70	24.4	28.6	12.9	34.3	25.9
1980-81	67,744	667.60	26.0	32.2	7.4	8.7	8.2
1982-83	53,111	632.50	28.3	30.2	26.1	23.2	-6.8
1984-85	60,467	573.70	31.7	32.3	42.9	32.8	31.3
1986-87	76,204	775.30	36.1	35.5	85.6	46.2	59.6

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....109,159.0

Present value of gains or losses 4/...241,279.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 5

Comparative Unit Value Information for France's Exports of SITC Product 673.21  
(Iron and Steel Simple Steel Bars)

Year	French f.o.b. exports to associated countries Value    Unit Value (\$) (\$000)		Premium or Discount Paid by French Associated Countries 1/				
			Total 2/	All Developed	Developing Countries		
					All Non-French	Latin America	Middle-East
1962-63	18,284	107.50	19.5	14.7	36.3	35.0	35.8
1964-65	16,348	106.50	13.3	11.6	22.2	19.6	22.0
1966-67	16,085	100.60	9.4	7.2	19.8	16.7	21.5
1968-69	15,657	106.30	12.7	12.3	19.9	26.6	19.0
1970-71	23,419	140.90	9.1	8.0	17.3	17.6	12.5
1972-73	39,929	174.70	9.7	9.9	15.0	17.2	8.3
1974-75	102,378	303.20	9.9	7.9	20.0	11.3	16.7
1976-77	70,506	252.90	-1.7	-6.2	8.9	-10.9	11.4
1978-79	85,809	341.70	-4.8	-8.9	11.8	-18.8	21.5
1980-81	58,056	424.50	11.2	12.7	5.3	-8.0	-5.1
1982-83	41,075	329.50	5.0	0.7	26.9	20.9	8.3
1984-85	46,755	329.80	14.1	10.9	30.5	36.1	18.5
1986-87	22,811	445.70	22.4	23.3	11.0	26.7	7.3

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....78,452.0

Present value of gains or losses 4/...216,348.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) \quad (P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 6

Comparative Unit Value Information for France's Exports of SITC Product 678.3  
(Iron and Steel Tube and Pipe)

Year	French f.o.b. exports to associated countries		Premium or Discount Paid by French Associated Countries 1/					
			Value (\$000)	Unit Value (\$)	Total 2/	Developing Countries		
						All Developed	All Non-French	Latin America
1962-63	144,124	263.60	28.3	41.2	24.7	25.8	32.1	
1964-65	50,963	233.40	30.8	34.6	35.0	22.9	42.4	
1966-67	50,592	212.60	21.0	26.9	22.3	6.0	27.6	
1968-69	170,454	173.60	0.5	5.8	-1.0	-16.1	5.0	
1970-71	81,004	299.50	38.8	47.5	10.8	-1.2	29.3	
1972-73	95,939	351.40	26.3	39.1	12.0	-39.1	18.4	
1974-75	74,454	689.10	18.0	36.2	17.3	-9.5	59.8	
1976-77	80,332	668.70	34.8	38.0	9.8	39.4	14.8	
1978-79	93,399	774.10	35.1	26.2	37.1	71.8	10.0	
1980-81	145,206	667.60	6.7	5.8	7.6	32.5	-16.7	
1982-83	86,839	593.20	5.4	-0.3	12.4	42.6	2.7	
1984-85	55,966	648.90	37.5	29.4	33.9	116.4	44.0	
1986-87	31,347	868.90	53.8	18.9	-21.1	-13.0	-59.2	

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....64,582.0

Present value of gains or losses 4/...192,867.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) \quad (P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 7

Comparative Unit Value Information for France's Exports of SITC Product 674.31  
(Iron and Steel Simple and Uncoated)

Year	French f.o.b. exports to associated countries Value Unit Value (\$) (\$000)		Premium or Discount Paid by French Associated Countries 1/				
			Total 2/	All Developed	Developing Countries		
					All Non-Franch	Latin America	Middle-East
1962-63	6,551	153.40	13.9	12.7	26.1	26.2	31.9
1964-65	7,656	154.60	17.9	16.4	28.9	28.5	31.3
1966-67	7,154	147.60	16.6	14.0	27.4	30.8	33.9
1958-69	8,991	152.50	20.6	18.6	31.4	37.7	28.5
1970-71	12,097	176.30	12.6	13.0	9.1	0.8	18.2
1972-73	21,878	213.70	11.2	11.2	14.8	-3.3	17.1
1974-75	35,153	348.80	25.2	26.0	21.3	21.6	16.0
1976-77	38,701	332.00	13.3	12.4	18.5	20.2	6.6
1978-79	60,182	376.30	1.4	-2.9	15.2	8.2	10.8
1980-81	53,172	424.30	5.4	0.2	17.3	7.3	13.9
1982-83	31,699	374.20	5.1	1.3	17.9	-11.5	11.3
1984-85	28,173	338.70	2.1	-3.2	14.0	-3.5	2.7
1986-87	30,647	430.60	1.2	-5.2	30.3	18.8	17.8

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....49,834.0

Present value of gains or losses 4/...128,711.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) \quad P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on a assumed discount rate of 8 per cent.

Appendix Table 8

Comparative Unit Value Information for France's Exports of SITC Product 673.41  
(Iron and Steel Simple Big Sections)

Year	French f.o.b. exports to associated countries		Premium or Discount Paid by French Associated Countries 1/				
			Total 2/	All Developed	Developing Countries		
					All Non-French	Latin America	Middle-East
Value (\$000)	Unit Value (\$)						
1962-63	64,966	113.20	16.8	14.9	25.5	9.8	43.5
1964-65	67,375	115.60	18.4	17.4	27.4	24.7	35.8
1966-67	65,340	117.30	2.4	19.6	21.1	19.5	36.8
1968-69	65,596	118.10	22.1	18.0	12.0	-6.0	35.4
1970-71	81,555	159.80	18.3	16.7	19.1	21.3	15.8
1972-73	91,647	197.40	17.6	14.4	18.8	20.8	18.5
1974-75	136,924	289.30	17.0	16.5	21.7	11.4	27.0
1976-77	109,855	295.30	14.1	8.5	15.8	5.8	33.5
1978-79	148,854	402.30	12.1	7.4	17.1	-31.3	34.8
1980-81	143,850	450.40	12.3	13.0	1.3	-9.5	4.7
1982-83	163,749	342.50	-7.3	-9.6	-7.7	-2.1	-9.1
1984-85	189,088	289.80	-8.0	-10.4	4.2	-18.7	-2.6
1986-87	78,480	444.60	9.7	4.6	13.3	-23.4	21.3

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....36,961.0

Present value of gains or losses 4/...95,790.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) \quad (P/D_f) = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 9

Comparative Unit Value Information for France's Exports of SITC Product 678.5  
(Iron and Steel Simple Tube Fittings)

Year	French f.o.b. exports to associated countries Value Unit Value (\$) (\$000)		Premium or Discount Paid by French Associated Countries 1/				
			Total 2/	All Developed	Developing Countries		
					All Non-French	Latin America	Middle-East
1962-63	5,622	757.20	34.9	44.9	19.5	7.2	44.7
1964-65	5,167	785.50	26.2	31.8	21.1	-14.2	48.8
1966-67	4,956	800.10	11.8	22.6	16.8	1.1	61.3
1968-69	6,151	871.70	7.8	18.1	-3.9	11.8	17.9
1970-71	12,753	1,098.10	11.3	19.4	0.6	-16.9	27.1
1972-73	13,940	1,353.90	14.7	27.0	-1.7	-0.7	18.2
1974-75	38,006	2,380.00	20.9	46.1	-14.0	14.7	7.6
1976-77	40,716	2,166.40	2.0	30.9	-15.6	-8.1	0.6
1978-79	57,435	3,206.20	30.6	63.4	12.1	20.8	16.1
1980-81	72,646	4,212.80	69.6	102.9	44.2	-13.7	47.9
1982-83	48,247	3,219.50	20.3	30.3	2.1	-11.0	9.3
1984-85	44,059	3,277.50	57.9	75.3	0.2	0.8	18.3
1986-87	43,055	5,033.30	51.3	67.5	12.8	-23.4	24.9

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....22,820.0

Present value of gains or losses 4/...36,474.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) \quad (P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 10

Comparative Unit Value Information for France's Exports of SITC Product 673.11  
(Iron and Steel Simple Steel Wire)

Year	French f.o.b. exports to associated countries		Premium or Discount Paid by French Associated Countries 1/				
	Value (\$000)	Unit Value (\$)	Total 2/	Developing Countries			Middle-East
				All Developed	All Non-French	Latin America	
1962-63	2,735	101.50	13.9	12.9	29.8	31.0	28.0
1964-65	3,567	104.00	16.5	16.2	23.5	23.1	26.9
1966-67	4,290	99.50	16.8	16.2	30.4	29.7	30.3
1968-69	2,852	94.40	9.1	8.6	18.1	16.2	14.9
1970-71	3,314	131.20	7.4	7.9	5.7	0.6	4.2
1972-73	8,287	161.60	10.0	9.9	10.6	2.5	19.4
1974-75	15,579	281.70	11.9	11.4	17.4	16.9	20.2
1976-77	12,656	232.60	-2.6	-3.4	6.1	0.5	6.7
1978-79	18,918	310.30	2.7	-3.6	23.5	31.5	15.8
1980-81	21,653	320.90	-3.3	-6.1	7.5	8.4	6.5
1982-83	31,237	247.40	-13.8	-18.5	5.7	1.0	7.3
1984-85	15,389	262.40	0.5	-4.4	10.6	3.3	14.1
1986-87	7,490	314.60	7.2	3.0	31.3	22.3	29.5

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....16,094.0

Present value of gains or losses 4/..42,557.0

1/ The French associated country premium or discount (P/D<sub>f</sub>) has been computed from the following formula:

$$(4) \quad (P/D)_f = [(U_f - U_g) \div U_g] \times 100.$$

where U<sub>f</sub> is the unit value for the French associates and U<sub>g</sub> is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses (A<sub>df</sub>) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where q<sub>f</sub> is the quantity of French associated country imports and U<sub>o</sub> is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 11

Comparative Unit Value Information for France's Exports of SITC Product 674.11  
(Iron and Steel Simple Heavy Plate)

Year	French f.o.b. exports to associated countries		Premium or Discount Paid by French Associated Countries 1/				
			Total 2/	Developing Countries			
				All Developed	All Non-French	Latin America	Middle-East
	Value (\$000)	Unit Value (\$)					
1962-63	4,086	125.00	15.7	15.3	11.3	30.9	16.9
1964-65	4,397	123.90	15.2	15.5	15.5	25.6	13.6
1966-67	3,911	120.60	14.1	14.3	18.3	37.1	-7.6
1968-69	4,283	135.20	23.6	24.7	11.4	21.0	4.1
1970-71	4,482	171.10	20.2	21.4	14.1	-14.9	25.1
1972-73	7,425	195.50	18.2	19.6	25.0	29.8	4.6
1974-75	16,539	360.60	17.9	23.8	-9.0	8.6	-4.9
1976-77	17,198	289.90	13.1	15.9	6.6	13.5	19.4
1978-79	18,523	404.70	22.8	25.1	19.2	14.2	8.5
1980-81	21,059	452.40	19.4	23.5	11.9	5.7	15.3
1982-83	13,921	425.50	26.5	30.3	19.4	8.0	7.2
1984-85	8,518	382.00	13.9	14.5	12.2	32.3	36.1
1986-87	7,598	486.40	34.5	32.9	52.4	23.4	20.9

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....14,536.0

Present value of gains or losses 4/...33,022.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) \quad (P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

Appendix Table 12

Comparative Unit Value Information for France's Exports of SITC Product 674.21  
(Iron and Steel Simple Medium Plate)

Year	French f.o.b. exports to associated countries Value (\$000)    Unit Value (\$)		Premium or Discount Paid by French Associated Countries 1/				
			Total 2/	All Developed	Developing Countries		
					Non-French	Latin America	Middle-East
1962-63	1,580	133.40	20.8	20.3	34.0	33.3	34.2
1964-65	2,026	136.20	21.1	21.8	21.3	22.5	27.0
1966-67	1,656	126.90	16.3	17.1	15.9	23.8	15.4
1968-69	1,471	135.20	12.0	13.9	17.3	40.1	30.5
1970-71	1,260	166.40	2.6	3.4	5.4	7.2	6.5
1972-73	2,842	188.90	-1.9	-3.3	9.8	21.4	12.5
1974-75	6,935	354.80	10.3	13.8	5.9	16.8	3.6
1976-77	7,576	284.30	-11.2	-2.6	-33.7	-40.3	10.6
1978-79	8,309	384.50	18.8	19.4	19.4	7.4	13.7
1980-81	8,866	390.60	14.2	11.2	17.8	11.5	15.8
1982-83	3,939	392.20	18.6	22.5	17.3	13.4	15.4
1984-85	3,437	345.30	14.8	14.2	17.8	20.9	16.8
1986-87	2,740	533.90	34.3	50.5	24.1	n.a. 5/	21.3

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/.....2,375.0

Present value of gains or losses 4/...7,088.0

1/ The French associated country premium or discount (P/D<sub>f</sub>) has been computed from the following formula:

$$(4) \quad (P/D)_f = [(U_f - U_g) \div U_g] \times 100.$$

where U<sub>f</sub> is the unit value for the French associates and U<sub>g</sub> is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses (A<sub>df</sub>) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where q<sub>f</sub> is the quantity of French associated country imports and U<sub>o</sub> is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

5/ Sufficient French exports were not available to Latin America to compute a unit value for the 1986-87 period.

Appendix Table 13

Comparative Unit Value Information for France's Exports of SITC Product 673.51  
(Iron and Steel Simple Small Sections)

Year	French f.o.b. exports to associated countries		Premium or Discount Paid by French Associated Countries 1/					
			Value (\$000)	Unit Value (\$)	Total 2/	Developing Countries		
						All Developed	All Non-French	Latin America
1962-63	12,085	124.30	22.9	23.5	28.7	19.5	33.8	
1964-65	14,439	124.90	16.0	16.4	31.0	24.5	25.1	
1966-67	10,408	117.40	19.5	20.7	22.4	8.5	11.7	
1968-69	8,985	117.40	27.5	29.1	27.7	22.0	19.0	
1970-71	8,836	150.40	10.4	11.1	9.1	12.5	0.8	
1972-73	13,697	187.40	9.7	12.1	4.0	11.8	8.3	
1974-75	28,444	313.60	7.3	7.0	2.5	6.3	6.3	
1976-77	19,525	318.10	-9.3	-6.8	-16.1	4.8	-23.7	
1978-79	1,963	358.10	-22.1	-24.5	-1.4	-69.2	1.8	
1980-81	1,721	442.50	-11.4	-1.5	-56.2	-57.2	-55.9	
1982-83	888	465.20	-5.7	2.9	-65.2	-81.7	-67.4	
1984-85	896	385.70	-11.2	-7.6	-45.0	n.a.	-2.7	
1986-87	721	467.90	-31.0	-30.4	-78.4	-80.3	-43.5	

Net Revenue Gains or Losses (\$000)

Actual dollar amount 3/..... 898.0  
Present value of gains or losses 4/...43,908.0

1/ The French associated country premium or discount ( $P/D_f$ ) has been computed from the following formula:

$$(4) \quad (P/D_f = [(U_f - U_g) \div U_g] \times 100.$$

where  $U_f$  is the unit value for the French associates and  $U_g$  is the unit value for the comparator group of countries.

2/ Excludes the French associated countries in Africa.

3/ The actual dollar amount of the gains and losses ( $A_{df}$ ) has been computed from:

$$(5) \quad A_{df} = (U_f - U_o) \times q_f$$

where  $q_f$  is the quantity of French associated country imports and  $U_o$  is the average unit value paid by all other developing countries. These values are then summed over the 1962-87 period.

4/ The present value in 1987 of all annual gains or losses computed from equation (5). The present value estimate is based on an assumed discount rate of 8 per cent.

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