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Notes and explanation of symbols

The following symbols are used in tables in the *Review*:

Three dots (...) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

A blank space in a table means that the item in question is not applicable.

A minus sign (-) indicates a deficit or decrease, unless otherwise specified.

A point (.) is used to indicate decimals.

A slash (/) indicates a crop year or fiscal year, e.g., 1970/1971.

Use of a hyphen (-) between years, e.g., 1971-1973, indicates reference to the complete number of calendar years involved, including the beginning and end years.

Reference to "tons" mean metric tons, and to "dollars", United States dollars, unless otherwise stated.

Unless otherwise stated, references to annual rates of growth or variation signify compound annual rates.

Individual figures and percentages in tables do not necessarily add up to corresponding totals, because of rounding.

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CONTENTS

Neo-Keynesian macroeconomics as seen from the South. <i>Joseph Ramos.</i>	7
Saving and investment under external and fiscal constraints. <i>Nicolás Eyzaguirre.</i>	31
Export promotion and import substitution in Central American industry. <i>Larry Willmore.</i>	49
The specificity of the Latin American State. <i>Enzo Faletto.</i>	69
The ecopolitics of development in Brazil. <i>Roberto Guimarães.</i>	89
Social policies in Costa Rica. <i>Ana Sojo.</i>	105
Poverty in Ecuador. <i>Eduardo Santos.</i>	121
Natural disasters and their economic and social impact. <i>Roberto Jovel.</i>	133
Institutionalism and structuralism. <i>Osvaldo Sunkel.</i>	147
Guidelines for contributors to CEPAL Review.	157
Raúl Prebisch Prize for Economics.	158
Recent ECLAC publications.	159

Export promotion and import substitution in Central American industry

*Larry Willmore**

The countries of Central America are often described as open economies because the ratio of trade to gross domestic product (GDP) is high. During the 1980s, the ratio of exports to gross regional product in Central America has averaged 23% and the ratio of imports to gross regional product (29%) is even higher. A large (but declining) portion of this trade consists of the exchange of manufactures among countries of the region. Still, there can be no doubt that the economies are very open by this measure.

In the manufacturing sector of Central America, the economies are even more open in terms of import ratios, but from the perspective of export ratios they are relatively closed. Extra-regional imports supply approximately a third of the apparent consumption of manufactures, yet less than 10% of the region's output of manufactures is exported to third countries, and there is no tendency for this ratio to rise. Excluding processed food, the dichotomy is even greater: extra-regional imports supply more than 40% of the region's demand for manufactures, while less than 5% of the production is exported to other countries.

The author provides a detailed study of this poor performance in export promotion and import substitution. He reviews trends in economic growth and trade, estimates the contribution of import substitution and export promotion to manufacturing growth, examines changing patterns of trade, and undertakes a preliminary analysis of the relationship between international trade and tariff protection.

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I

Economic growth and trade in manufactures*

The 1960s were golden years for Central America. Spurred by import substitution in a protected common market, manufacturing output grew at an annual rate of 8.4%, well above the 5.7% per annum growth of gross regional product (table 1). As a result, the contribution of manufacturing to gross regional product increased from 12% at the beginning of the decade to more than 16% in 1970 (table 2).

In the first half of the 1970s, GDP growth fell to 5.3% per annum, and manufacturing growth plunged to 6%. Only Costa Rica and Honduras managed to continue with high rates of manufacturing growth into the 1970s, but that cannot be ascribed to regional integration. This is most obvious in the case of Honduras, which left the Central American Common Market at the end of 1970, re-establishing trade barriers to protect its industries from intra-regional import competition. The low growth rate of GDP for Honduras in the 1970-1975 period is due to Hurricane Fifi, which destroyed much of Honduran agriculture in September 1974. Costa Rica continued to participate in the Central American Common Market, but it is import substitution and extra-regional exports, not intra-regional trade, that account for the 1970-1975 growth in manufacturing output.

In the second half of the 1970s, GDP growth fell to 3.5% and manufacturing growth to 4.4%. This worsening performance was due solely to internal problems in El Salvador and Nicaragua, for despite the "oil shock" of 1979 the terms of trade improved for each of the five Central American countries in the 1975-1980 period. If one looks only at Costa Rica, Guatemala and Honduras, their combined growth rates in 1975-1980 were 6.9% and 5.8% for manufacturing and GDP, respectively, which compare favourably to the rates of 6.2% and 5.3% registered in the 1970-1975 period.

*Gabriel Siri and other colleagues provided helpful comments on an earlier version. Data processing was possible thanks to generous support from the Systematization Division of the Instituto Mexicano del Seguro Social (IMSS).

Table 1

**CENTRAL AMERICA: GROWTH OF GROSS DOMESTIC PRODUCT AND
ITS MANUFACTURING COMPONENT**

(Average annual rates at constant prices)

	1960- 1970	1970- 1975	1975- 1980	1980- 1986	1986	1987
Total						
Manufacturing	8.4	6.0	4.4	-0.8	2.3	2.7
GDP	5.7	5.3	3.5	-0.6	1.3	2.8
Costa Rica						
Manufacturing	9.2	8.9	6.0	0.4	7.1	5.5
GDP	6.1	5.8	5.1	0.2	4.6	3.8
El Salvador						
Manufacturing	8.1	5.7	0.3	-2.9	2.5	3.0
GDP	5.6	5.4	0.8	-2.0	0.6	2.6
Guatemala						
Manufacturing	7.6	4.7	7.7	-2.1	0.7	1.5
GDP	5.5	5.6	5.8	-1.2	0.2	2.5
Honduras						
Manufacturing	7.0	6.8	6.2	1.0	0.5	3.9
GDP	5.0	3.7	7.2	0.6	2.4	4.4
Nicaragua						
Manufacturing	11.1	5.9	-0.9	0.9	1.9	1.0
GDP	6.9	5.1	-4.2	0.6	-0.6	1.7

Source: 1960-1970: *Statistical Yearbook for Latin America*, 1979. 1970-1985: *Statistical Yearbook for Latin America and the Caribbean*, 1987. 1986-1987: Preliminary estimates by ECLAC based on official data.

In summary, economic growth in Central America slowed in the 1970s, but manufacturing was less affected than other components of GDP. As a result, the ratio of manufacturing output to GDP continued to climb in all five countries, reaching 17.7% for the region as a whole in 1980 (table 2). Moreover, the slowdown in economic growth is due largely to the poor performance of El Salvador and Nicaragua; the growth rates of the other three countries in the 1970s compare favourably with their growth rates in the 1960s.

After 1980 economic recession affected all five countries, particularly severely in El Salvador and Guatemala, where manufacturing output and GDP fell in the 1980-1985 period. These declines, combined with stagnation in the other three countries, resulted in a decline in manufacturing and total output for the region as a whole (table 1). The recession, caused primarily by deterioration of the terms of trade in the five countries, has been aggravated by an absolute decline in the value of goods traded among the

Central American countries. The years 1986 and 1987 registered positive growth rates; yet, with the partial exception of Costa Rica, the recovery has been extremely weak. Central America's real per capita output of manufactures is now lower

Table 2

**CENTRAL AMERICA: RATIO OF
MANUFACTURING OUTPUT TO GROSS
DOMESTIC PRODUCT**

(Percentages)

	1960	1970	1975	1980	1985
Total	12.1	16.4	17.0	17.7	17.5
Costa Rica	11.1	15.5	17.9	18.6	18.8
El Salvador	13.8	15.2	15.4	15.0	14.6
Guatemala	11.7	16.7	16.1	17.6	16.8
Honduras	11.4	12.7	14.7	14.0	14.3
Nicaragua	12.6	20.9	21.7	25.6	25.9

Source: 1960: *Statistical Yearbook for Latin America*, 1979. Other years: *Statistical Yearbook for Latin America and the Caribbean*, 1987.

than that of 1975 and its gross regional product per capita is lower than that registered in 1970.

Intra-regional trade contracted sharply in the 1980s, but its deterioration began in the early 1970s. In 1970 intra-regional trade accounted for 11.5% of apparent consumption and 16% of the gross value of Central America's production of manufactures.¹ If processed food is deleted, these proportions rise to 12.7% and 21.7% respectively. Between 1970 and 1975 there was a relative contraction of trade between countries in the region, and intra-regional shipments fell to 9.5% of consumption and 12.6% of output. In other words, intra-regional trade failed to keep pace with the growth in regional demand or production (table 2).²

It is interesting to note that in 1970 the ratios of intra-regional imports to consumption vary little by country: from 9.5% for Costa Rica to 13.6% for Honduras; in contrast, the ratios of the intra-regional exports to output vary widely. Honduras in 1970 exported only 6.6% of its manufacturing output to neighbouring countries, whereas Guatemala exported more than a fifth (22.7%) of its production to countries of the region. Throughout the 1970s and into the 1980s, Guatemalan industry continued to be highly dependent on exports to countries in the area (table 3).

Between 1975 and 1980 there was a sharp and unsustainable expansion of intra-regional trade owing largely to exports from Costa Rica and Guatemala in 1980 to war-torn El Salvador and Nicaragua. Despite this expansion, intra-regional trade ratios for Central America as a whole were lower in 1980 than they had been in 1970. By 1985, trade had contracted to such an extent that intra-regional trade ratios on average were little more than half those of 1970.

The ratio of extra-regional imports to regional consumption of manufactures rose from 32.8% in 1970 to 35.4% in 1975, declining

slightly to 34.4% in 1985. This relative stability between 1970 and 1985 masks considerable inter-country differences: in Costa Rica and Honduras, the ratio fell after an initial rise; in Guatemala and Nicaragua the ratio rose; and in El Salvador it was extremely volatile, but only slightly higher in 1985 than in 1970 (table 3). El Salvador thus remains the Central American country that is least dependent on overseas sources for its supply of manufactures.

The ratio of extra-regional exports of manufactures to the gross value of output rose sharply in 1975 owing largely to increased exports of sugar, but it fell back in 1980 to its 1970 level (9% of output). In 1985 only 8% of Central America's output of manufactures was exported to extra-regional markets, with the ratio varying from 12.0% in Honduras to 3.1% in Nicaragua. If processed food, which includes such traditional exports as chilled beef, sugar and frozen shrimp, is deleted, the extra-regional export ratios fall to 4.7% for Central America as a whole, and to 6.2% and 1.2% for Honduras and Nicaragua, respectively. These ratios are somewhat underestimated, for extra-regional exports are valued at competitive world prices, while production for home markets and intra-regional exports are valued at the higher prices made possible by a protective tariff.³

As might have been expected, some of the decline in intra-regional imports was substituted by local production and some by imports from third countries. Between 1970 and 1985, the proportion of apparent consumption of manufactures supplied by local plants increased 3.5 percentage points to 59.2%, and the proportion supplied by plants in third countries increased 1.6 percentage points to 34.4% (tables 4 and 5). Central America as a region became more "open" to imports, while individual countries became more closed at the expense of intra-regional trade.

By 1985, local production satisfied more than half of the consumption in 13 of the 18 categories of manufactures listed in table 4. The exceptions were chemicals (28.8%), basic metals and metal products (32.1%), machinery (17.7%), transport equipment (12.7%) and

¹Apparent consumption is defined as national production plus imports less exports. In the remainder of the paper, the word "consumption" is used interchangeably with "apparent consumption".

²Throughout this document Panama is included in intra-regional trade figures, since it has bilateral treaties of preferential trade with Central America, it is as much as part of regional integration as Honduras is. Panamanian production and consumption are excluded from the regional totals only because of a lack of comparable data.

³See section IV. The same reasoning applies, of course, to extra-regional import ratios.

Table 3

CENTRAL AMERICA: TRADE RATIOS, 1970-1985

	Intra-regional imports (apparent consumption)				Intra-regional exports (production)				Extra-regional imports (apparent consumption)				Extra-regional exports (production)			
	1970	1975	1980	1985	1970	1975	1980	1985	1970	1975	1980	1985	1970	1975	1980	1985
Total manufacturing	11.5	9.5	10.3	6.4	16.0	12.6	14.3	9.0	32.8	35.4	34.6	34.4	9.1	14.1	9.0	8.0
Costa Rica	9.5	7.4	7.7	3.6	11.9	10.1	12.8	7.6	34.6	34.9	35.2	30.2	7.3	10.0	8.3	8.3
El Salvador	11.5	12.4	15.5	11.4	17.8	13.9	12.0	6.9	27.5	33.4	23.6	28.2	4.7	14.5	5.3	6.8
Guatemala	10.7	7.9	6.0	5.5	22.7	18.1	25.1	20.0	36.2	41.1	46.6	42.8	8.0	16.3	9.7	8.8
Honduras	13.6	7.2	5.9	5.7	6.6	5.9	6.3	2.6	37.3	37.9	40.4	34.0	15.2	18.7	14.9	12.0
Nicaragua	11.0	10.5	16.5	3.7	11.8	9.7	5.8	1.4	28.0	29.6	21.8	39.2	13.1	13.2	7.8	3.1
Total manufacturing less food	12.7	10.3	11.4	7.3	21.7	17.1	18.7	12.0	41.1	42.6	41.3	42.1	3.2	4.7	3.5	4.7
Costa Rica	10.2	7.5	8.3	3.9	15.6	12.8	16.4	10.1	43.4	42.4	42.9	38.8	0.9	2.8	2.9	5.6
El Salvador	13.5	13.4	18.9	13.8	26.4	19.6	18.0	10.8	35.9	39.2	28.9	36.2	1.1	3.6	3.1	5.4
Guatemala	11.9	8.2	6.1	5.9	28.4	24.0	29.9	24.5	43.1	47.1	52.4	49.0	2.1	2.6	3.5	4.0
Honduras	13.4	7.6	6.3	6.5	8.3	7.8	8.4	3.3	44.0	45.1	47.6	40.2	13.1	16.7	7.7	6.2
Nicaragua	13.3	12.8	19.7	4.6	15.7	13.2	8.0	1.6	37.5	38.8	25.8	46.6	2.1	3.0	1.1	1.2

Source: Estimates of the author based on official data.

Note: Intra-regional trade includes Panama.

Table 4
CENTRAL AMERICA: SOURCES OF CONSUMER SUPPLY

(Percentages)^a

Industry	Local factories		Intra-regional imports ^b		Extra-regional imports	
	1970	1985	1970	1985	1970	1985
Total	55.7	59.2	11.5	6.4	32.8	34.4
Food	86.4	85.5	7.5	3.7	6.1	10.8
Beverages	94.8	96.1	1.0	0.5	4.2	3.4
Tobacco	95.0	99.2	4.7	0.7	0.3	0.1
Textiles	44.5	51.7	28.0	15.8	27.5	32.5
Garment/shoe	81.8	86.4	14.1	8.7	4.1	4.9
Leather	72.0	88.1	19.3	6.3	8.7	5.6
Wood	85.8	90.4	10.6	6.8	3.6	2.8
Furniture	87.1	97.0	9.8	2.1	3.1	0.9
Paper	41.4	53.9	9.5	8.0	49.1	38.1
Printing	78.2	76.5	8.1	3.5	13.7	20.0
Chemicals	30.2	28.8	20.3	12.7	49.5	58.5
Petroleum derivatives	70.7	61.2	4.1	3.8	25.2	35.0
Rubber	50.8	62.6	22.9	11.8	26.3	25.6
Non-metallic minerals	66.2	72.7	10.0	7.3	23.8	20.0
Metals & products	26.1	32.1	13.5	8.4	60.4	59.4
Machinery	11.6	17.7	7.9	4.5	80.5	77.8
Transp. equipment	15.7	12.7	1.2	2.0	83.1	85.3
Other	47.3	38.6	8.2	6.9	44.5	54.5

Source: Estimates of the author based on official data.

^aDistribution of percentages of apparent consumption in each category of manufactures.

^bIncludes imports from Panama.

other manufactures (38.6%). The increased dependence of the Central American consumer on local plants was fairly generalized among industry subsectors, but not among countries. The shift from imported to local manufactures is the result of sharp increases in the share of demand satisfied by local producers in Costa Rica and Honduras. In El Salvador, Guatemala and Nicaragua, despite the existence of widespread excess capacity, the proportion of consumption of manufactures supplied by local plants fell between 1970 and 1985. Only in El Salvador did the intra-regional import/consumption ratio remain constant between 1970 and 1985; in the other countries it declined sharply (table 3).

As a result of the contraction of intra-regional trade, consumers in Costa Rica and Honduras have become more dependent on local producers, but local producers in all countries of the region, especially El Salvador and Nicaragua, have become more dependent on their home market. The proportion of total output of manu-

factures sold in home markets in Central America increased from 75% in 1970 to 83% in 1985 (table 5). In both years, well over half of the sales of each of the eighteen subsectors listed in table 5 were destined for home markets. The share of output marketed locally in 1985 varies from 65.8% (chemicals) to 99.4% (beverages).

With depressed demand and barriers to intra-regional trade, one might expect to see a surge of extra-regional exports. Surprisingly, the proportion of output exported to extra-regional markets in 1985 was only 8%, lower than the 9.1% recorded in 1970. This result stems from a decline in the export ratio for processed food from 19% of total production in 1970 to 14% in 1985. In all other industries, except for petroleum derivatives, extra-regional export ratios rose. The increase in the export ratio is especially notable for textiles (from 1.3% to 11%) and furniture (from 0.4% to 9%). Moreover, studying the detailed statistics available to the author of this paper, only in Honduras and Nica-

Table 5
CENTRAL AMERICA: DESTINATION OF MANUFACTURING OUTPUT

(Percentages)^a

Industry	National markets		Intra-regional exports ^b		Extra-regional exports	
	1970	1985	1970	1985	1970	1985
Total	74.9	83.0	16.0	9.0	9.1	8.0
Food	74.6	82.5	6.4	3.5	19.0	14.0
Beverages	99.0	99.4	1.0	0.5	0.0	0.1
Tobacco	94.3	95.2	4.6	0.6	1.1	4.2
Textiles	60.4	68.3	38.1	20.7	1.3	11.0
Garment/shoe	84.6	85.9	14.6	8.7	0.8	5.4
Leather	78.4	89.4	21.1	6.4	0.5	4.2
Wood	63.5	65.6	7.7	4.9	28.8	29.5
Furniture	89.5	89.0	10.1	2.0	0.4	9.0
Paper	81.3	86.0	18.6	12.8	0.1	1.2
Printing	90.3	94.8	9.5	4.4	0.2	0.8
Chemicals	57.0	65.8	39.5	28.4	3.5	5.8
Petroleum derivatives	87.8	91.5	5.0	5.8	7.2	2.7
Rubber	68.5	81.2	30.8	15.4	0.7	3.4
Non-metallic minerals	72.3	89.0	27.5	8.9	0.2	2.1
Metals & products	64.1	75.5	32.8	19.4	3.1	5.1
Machinery	58.5	77.2	39.8	19.4	1.7	3.4
Transp. equipment	92.7	84.0	7.1	13.8	0.2	2.2
Other	84.2	81.9	14.6	14.7	1.2	3.4

Source: Estimates of the author based on official data.

^aPercentage distribution of gross value of output.

^bIncludes exports to Panama.

ragua is there evidence of widespread falls in extra-regional export ratios between 1970 and 1985. In each of these countries, the domestic currency was increasingly overvalued with the result that exports were not encouraged.

Although extra-regional export performance has shown some improvement, by 1985 10% or more of the region's output was

exported to third countries in only three industries: food, textiles and wood. Costa Rica registered ratios greater than 10% in five industries: food, textiles, leather, metals and metal products, and other manufactures; El Salvador only in textiles; Guatemala in food, garments and wood; Honduras in food, wood and furniture; and Nicaragua in none.

II

Sources of manufacturing growth

In this section the exports/output and imports/consumption ratios discussed earlier are employed to decompose manufacturing growth into a) that part "expected" from the growth of final demand, i.e., with all trade ratios constant, b) that attributable to import substitution, and

c) that attributable to export promotion. The calculations are inspired by H.B. Chenery's classic paper "Patterns of Industrial Growth".⁴

⁴American Economic Review 50:4, September 1960, pp. 624-654.

Chenery, and the researchers that followed him,⁵ measured import substitution as a fall in the ratio of external purchases to total supply. Since exports are a part of total supply, this measure has the disadvantage that it is affected both by changes in imports and by changes in exports. Any increase in exports is interpreted as "import substitution" because it decreases the ratio of imports to total supply.

In the calculations reported in this section, the effects of export promotion on manufacturing growth are separated from those of import substitution. Any fall in the ratio of imports to consumption is indicative of import substitution. Similarly, a rise in the proportion of the output that is exported is considered to be evidence of export promotion. (See the appendix for details.)

This decomposition of industrial growth rests, of course, on arbitrary assumptions that may be questioned. Output growth is probably not independent of the level of exports, so in focusing solely on changes in the ratio of exports to output we miss part of the positive effect of exports on industrial growth. Similarly, one might argue that import substitution results in less consumer choice, hence lower demand, so that the equation overstates the contribution of import substitution to growth. Unfortunately, to take into account these interrelationships requires an enormous amount of information that is not available to us. Such criticisms are valid, but this decomposition provides a useful description, and the exercise is intended to be a *description*, not an *explanation*, of reality.

This decomposition of industrial growth was carried out for each of 18 industrial subsectors and each of the Central American countries. Table 6 reports the results of these calculations treating Central America as a single unit. Trade between the five countries of the region is included with local shipments, but trade with Panama is treated as exports and imports because Panamanian output is excluded from Central American production. All data are in

current Central American pesos, a unit of account equal to the United States dollar, so the calculations measure price inflation as well as real growth in output and consumption.

Manufacturing output in Central America grew by more than 2 000 million pesos between 1970 and 1975, and extra-regional export promotion accounted for nearly a tenth of this growth. Export promotion was concentrated in the food and, to a lesser extent, the textile and chemical industries. Our measure of import substitution reveals a negative effect on industrial growth in this period, but significant import substitution does appear to have taken place in textiles. Trade with Panama had little effect on overall growth, but the 7 million pesos of import substitution reflects largely a big fall in imports of chemicals, while the negative 2 million peso figure for export promotion is due to reduced sales of petroleum derivatives.

Between the years 1975 and 1980, nominal manufacturing output grew by 3 600 million pesos, but real growth was undoubtedly much lower because of the inflation in this period. In sharp contrast with the previous period, promotion of extra-regional exports did not contribute to industrial growth. On the contrary, the changes in extra-regional exports had a negative effect on growth, notably for food, wood and petroleum derivatives, reflected in declines in the proportion of output exported to third countries. Export promotion of textiles continued, but its contribution to growth was only 3.8 million pesos, much smaller than in 1970-1975. Extra-regional import ratios continued to rise at a faster pace, with the notable exception of the metal-working industries, which recorded substantial import substitution.

The nominal value of industrial production fell by more than 500 million pesos between 1980 and 1985. Nearly 40% of this fall can be attributed to increases in extra-regional import ratios and decreases in extra-regional export ratios, a reflection of supply disruptions caused by armed conflicts and increasingly over-valued exchange rates in the region. It is of interest to note, however, that although the lack of import substitution was widespread, export promotion continued in textiles and began, stimulated no doubt by decreased regional demand, in garments and footwear.

⁵See, for example, Padma Desai, "Alternative Measures of Import Substitution", *Oxford Economic Papers*, November 1969, pp. 312-324, and Salvatore Schiavo-Campo, "Sustitución de Importaciones en Centroamérica", *La integración económica centroamericana*, ed., Eduardo Lizano (Fondo de Cultura Económica, Mexico, 1975), vol. 1, pp. 135-163.

Table 6
CENTRAL AMERICA: SOURCES OF INDUSTRIAL GROWTH BY INDUSTRY, 1970-1985
(Millions of Central American pesos)^a

	Actual growth	Expected growth ^a	Sources of growth			
			Panama trade		Extra-regional	
			Import substitution	Export promotion	Import substitution	Export promotion
1970-1975						
Total	2 332.6	2 137.5	7.0	-2.0	-18.8	208.8
Total less food	1 502.8	1 470.0	8.4	-2.1	-6.3	32.9
Food	829.7	667.6	-1.4	0.1	-12.4	175.9
Beverages	142.9	145.4	0.5	-	-3.1	-
Tobacco	39.3	35.9	0.2	-	0.1	3.1
Textiles	134.9	110.2	-0.3	0.1	14.1	10.8
Garment/shoe	79.1	73.9	-	0.1	1.2	4.0
Leather	20.2	17.4	-	-	1.4	1.4
Wood	70.9	68.5	-0.1	-0.2	-4.6	7.5
Furniture	20.0	18.7	0.1	-	0.7	0.5
Paper	57.0	47.1	-0.1	-	7.3	2.7
Printing	31.6	32.9	0.5	-0.2	-2.1	0.4
Chemicals	291.3	294.8	8.0	-0.4	-25.0	14.0
Petroleum derivatives	256.3	266.0	-0.7	-3.6	9.3	-14.8
Rubber	61.8	57.8	-0.2	0.1	4.1	-
Non-metallic minerals	101.1	91.5	0.1	2.0	5.4	2.1
Metals & products	96.0	90.5	1.0	-0.5	6.3	-1.2
Machinery	58.6	71.8	-0.3	0.7	-15.6	2.0
Transp. equipment	26.2	26.1	0.1	-	-0.1	0.1
Other	15.5	21.5	-0.2	-0.2	-5.7	0.2
1975-1980						
Total	3 622.5	4 117.1	-30.0	10.0	-165.9	-309.0
Total less food	2 517.6	2 660.8	-21.9	8.2	-99.0	-30.5
Food	1 104.9	1 456.3	-8.1	2.1	-67.0	-278.5
Beverages	324.9	319.7	-2.2	0.1	7.1	-
Tobacco	93.8	95.2	-	-	-	-1.5
Textiles	112.2	115.2	-0.7	2.0	-8.0	3.8
Garment/shoe	186.1	197.4	-0.6	1.9	-8.4	-4.2
Leather	31.8	29.7	-0.1	-	-	2.3
Wood	63.7	81.7	0.2	-	8.8	-27.1
Furniture	59.1	54.9	-	-0.1	-0.5	4.8
Paper	82.1	98.4	-7.5	0.3	-7.9	-1.2
Printing	72.6	79.8	-0.1	0.1	-6.5	-0.7
Chemicals	265.8	319.5	-7.9	9.3	-47.3	-7.8
Petroleum derivatives	557.3	668.9	1.3	-5.7	-91.1	-16.2
Rubber	160.9	150.4	0.2	-0.2	6.0	4.4
Non-metallic minerals	157.8	154.4	-	-2.5	5.8	-
Metals & products	141.8	147.6	-1.4	1.2	-11.5	5.9
Machinery	129.1	80.6	-1.8	0.8	44.2	5.2
Transp. equipment	57.4	33.6	-0.3	0.1	23.4	0.6
Other	21.2	33.7	-1.1	0.9	-13.2	1.0
1980-1985						
Total	-574.1	-352.6	-3.7	7.7	-131.6	-93.9
Total less food	-516.6	-461.0	-7.9	4.7	-112.2	59.7
Food	-57.5	108.4	4.1	2.9	-19.5	-153.5
Beverages	3.7	-2.1	1.7	-0.5	4.5	0.1
Tobacco	1.6	0.5	-	-	0.1	1.0
Textiles	-85.3	-70.7	-0.5	0.5	-30.5	16.0
Garment/shoe	-76.0	-87.2	-1.1	-1.2	2.1	11.4
Leather	-3.4	-0.7	-	-	0.4	-2.3
Wood	-44.4	-57.5	-	-0.6	0.1	13.5
Furniture	-13.5	-17.0	-	0.1	1.0	2.5
Paper	26.1	-12.4	6.9	-0.2	33.5	-1.7
Printing	-18.6	-20.1	0.5	0.5	-0.1	0.6
Chemicals	-29.5	8.4	6.1	2.6	-48.5	1.9
Petroleum derivatives	-120.0	57.1	-21.8	3.2	-57.7	13.4
Rubber	4.9	16.4	-0.7	0.4	-14.3	3.1
Non-metallic minerals	-31.9	-32.8	-0.4	0.2	-0.7	1.8
Metals & products	-45.4	-55.8	1.0	0.9	6.2	2.3
Machinery	-33.7	-40.3	1.7	-0.3	10.0	-4.8
Transp. equipment	-58.1	-32.3	-2.4	-	-24.0	0.6
Other	6.9	-0.4	1.2	-0.7	6.6	0.3

Source: Estimates of the author based on official data.

^a Expected growth is estimated with constant trade ratios.

In summary, in each of the three five-year periods, nearly all industrial growth can be attributed to that which would be expected with constant trade ratios (table 6). In other words, neither import substitution nor export promotion was of great importance as a source of growth in those periods. Nonetheless, it is interesting to note that there was a generalized absence of extra-regional import substitution during those 15 years, whereas some export promotion was evident in 1970-1975 and, to a lesser extent, in 1980-1985.

The decline of the Central American Common Market (CACM) began in the early 1970s. Costa Rica, Guatemala and Honduras show considerable substitution of intra-regional imports in the 1970-1975 period, and all five countries registered falls in intra-regional export promotion. The 1975-1980 period was one of recovery of intra-regional trade owing to exports from Costa Rica and Guatemala to El Salvador and Nicaragua as well as to increased trade with Panama. In 1980-1985, however, integration declined rapidly, as a consequence of restrictions on intra-regional imports and export restrictions due to problems with the intra-CACM payments system. Guatemalan industries, which gained most from the 1975-1980 expansion of intra-regional trade, were most affected by its subsequent contraction.

Regarding extra-regional imports, the 1970-1975 period shows a varied experience by country: Costa Rica reveals considerable import substitution, while Guatemala shows strong import expansion and the other three countries are in intermediate positions. The strong expansion of external purchases in Central America in the 1975-1980 period was due entirely to imports of Guatemala and Honduras, for the other three countries record positive import substitution in this period; in the 1980-1985 period, however, the import expansion is attributable to Nicaragua and, to a lesser extent, El Salvador, a reflection of supply disruptions, hence increased need for imports, in those war-torn countries (table 7).

Extra-regional export promotion contributed significantly to the growth of manufacturing output in all countries except Nicaragua in the 1970-1975 period. In 1975-1980 the contribution of extra-regional exports was negative in all five countries, and in 1980-1985 it was negative in all countries save El Salvador (table 7). Nevertheless, if food products are deleted there is evidence of export promotion in Costa Rica and El Salvador in the 1980-1985 period. (Detailed calculations are not shown here, but are available from the author upon request.)

III

Intra-regional and extra-regional trade patterns

A well-known feature of the Central American Common Market is the surprising uniformity of intra-regional exports between the five countries. They all tend to produce and export similar products, and it is difficult to identify a country which dominates output in any given industry.⁶

The weakening of economic integration in the 1970s and 1980s had only a small effect on this uniformity of trade patterns. As can be seen from the statistics reported in table 8, rank correlation coefficients calculated from data for 80 four-digit ISIC industries fell only slightly for pairs of countries, and in all cases remained positive and highly significant. The rank correlation between Panama's exports and those of each of the five countries increased substantially over the 1970-1985 period along with the increasing trade of Panama with Central Amer-

⁶See L. Willmore, "Free Trade in Manufactures among Developing Countries", *Economic Development and Cultural Change* 20:4, July 1972, pp. 659-670, and "El Patrón de Comercio y Especialización en el Mercado Común Centroamericano", in *La Integración Económica Centroamericana*, ed., Eduardo Lizano (Fondo de Cultura Económica, Mexico, 1975), vol. 1, pp. 214-231.

Table 7
CENTRAL AMERICA: SOURCES OF INDUSTRIAL GROWTH BY COUNTRY,
1970-1985

(Millions of Central American pesos)^a

	Actual growth	Expected growth ^b	Sources of growth			
			Intra-regional ^a		Extra-regional	
			Import substitution	Export promotion	Import substitution	Export promotion
1970-1975						
Total	2 332.6	2 137.5	7.0	-2.0	-18.8	208.8
Costa Rica	613.9	562.6	28.1	-30.4	20.1	33.6
El Salvador	447.5	407.8	-1.8	-35.0	-8.2	84.8
Guatemala	541.9	485.7	30.0	-30.9	-21.3	78.5
Honduras	267.3	218.6	46.2	-8.2	-9.2	19.9
Nicaragua	461.9	467.1	2.8	-17.9	6.3	3.5
Percentages ^c						
Total	100	92	-	-	-1	9
Costa Rica	100	92	5	-5	3	5
El Salvador	100	91	-	-8	-2	19
Guatemala	100	90	6	-6	-4	14
Honduras	100	82	17	-3	-3	7
Nicaragua	100	101	1	-4	1	1
1975-1980						
Total	3 622.5	4 117.1	-30.0	10.3	-165.9	-309.0
Costa Rica	1 145.8	1 134.9	-25.1	70.4	3.4	-37.8
El Salvador	513.3	659.8	-67.2	-6.3	53.0	-126.0
Guatemala	831.1	925.0	23.7	118.3	-170.6	-65.4
Honduras	729.8	768.2	26.6	5.2	-38.6	-31.6
Nicaragua	407.2	559.5	-104.7	-30.3	21.5	-38.9
Percentages ^c						
Total	100	114	-1	-	-5	-9
Costa Rica	100	99	-2	6	-	-3
El Salvador	100	129	-13	-1	10	-25
Guatemala	100	111	3	14	-21	-8
Honduras	100	105	4	1	-5	-4
Nicaragua	100	137	-26	-7	5	-10
1980-1985						
Total	-574.1	-352.6	-3.7	7.7	-131.6	-93.9
Costa Rica	-13.8	-61.6	122.5	-111.7	39.3	-2.3
El Salvador	-11.5	16.5	73.7	-47.3	-72.5	18.1
Guatemala	-445.5	-373.9	17.6	-92.6	28.0	-24.7
Honduras	20.7	43.9	1.3	-38.0	40.8	-27.3
Nicaragua	-124.0	-15.2	238.5	-48.5	-248.9	-49.9
Percentages ^c						
Total						
Costa Rica						
El Salvador						
Guatemala						
Honduras	100	212	6	-184	198	-132
Nicaragua						

Source: Estimates of the author based on official data.

^aIntra-regional trade includes Panama and for Central America it is only trade with Panama.

^bExpected growth is estimated with constant trade ratios.

^cPercentages are not shown for negative growth.

Table 8

CENTRAL AMERICAN ISTHMUS: COEFFICIENTS OF RANK CORRELATION
FOR INTRA-REGIONAL EXPORTS OF MANUFACTURES

	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama
Costa Rica						
1970	...	0.724	0.755	0.654	0.676	0.340
1985	...	0.558	0.783	0.511	0.466	0.571
El Salvador						
1970	0.724	...	0.652	0.685	0.629	0.402
1985	0.558	...	0.588	0.646	0.591	0.546
Guatemala						
1970	0.755	0.652	...	0.697	0.612	0.277
1985	0.783	0.588	...	0.591	0.469	0.566
Honduras						
1970	0.654	0.685	0.697	...	0.652	0.264
1985	0.511	0.646	0.591	...	0.608	0.456
Nicaragua						
1970	0.676	0.629	0.612	0.652	...	0.289
1985	0.466	0.591	0.469	0.608	...	0.349
Panama						
1970	0.340	0.402	0.277	0.264	0.289	...
1985	0.571	0.546	0.566	0.456	0.349	...

Source: Calculations of the author based on official statistics.

Note: Spearman rank correlation coefficients, data for 80 ISIC industries ranked by the value of intra-regional exports. All coefficients are statistically significant at the .02 level, and coefficients larger than 0.277 are statistically significant at the .01 level.

Table 9

CENTRAL AMERICA: COEFFICIENTS OF RANK CORRELATION FOR
EXTRA-REGIONAL EXPORTS OF MANUFACTURES

	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua
Costa Rica					
1970	...	0.073	0.360	0.300	0.341
1985	...	0.384	0.532	0.472	0.265
El Salvador					
1970	0.073	...	0.487	0.104	0.333
1985	0.384	...	0.541	0.496	0.301
Guatemala					
1970	0.360	0.487	...	0.405	0.475
1985	0.532	0.541	...	0.478	0.420
Honduras					
1970	0.300	0.104	0.405	...	0.420
1985	0.472	0.496	0.478	...	0.310
Nicaragua					
1970	0.341	0.333	0.475	0.420	...
1985	0.265	0.301	0.420	0.310	...

Source: Calculations of the author based on official statistics.

Note: Spearman rank correlation coefficients, data for 70 industries (1970) and 73 industries (1985) ranked by the value of extra-regional exports. For 1970, all coefficients are statistically significant at the .01 level except those for El Salvador-Costa Rica and El Salvador-Honduras. For 1985, all coefficients except Costa Rica-Nicaragua are statistically significant at the .01 level. Panama is not included owing to lack of comparable data.

Table 10

CENTRAL AMERICA: COEFFICIENTS OF RANK CORRELATION BETWEEN INTRA- AND EXTRA-REGIONAL EXPORTS

	1970	1985
Costa Rica	0.489	0.545
El Salvador	0.435	0.672
Guatemala	0.502	0.542
Honduras	0.400	0.517
Nicaragua	0.507	0.539

Source: Calculations of the author based on official statistics.

Note: Spearman rank correlation coefficients, data for 80 ISIC industries ranked by the value of intra-regional and extra-regional exports. Exports to Panama are regarded as intra-regional. All coefficients are statistically significant at the .01 level.

ica. The calculations in table 8 refer only to manufactures, but this category of goods accounts for more than 90% of total intra-regional trade.

Since 1970, manufactures have typically accounted for 20% to 25% of Central America's extra-regional exports, so it is interesting to see whether the countries display the same uniformity in extra-regional exports that they do in intra-regional exports. The rank correlations were therefore calculated with figures for some 70 industries which registered extra-regional exports (table 9). When these statistics are compared with those of table 8, it is apparent that the pattern of extra-regional exports is less uniform among countries than the pattern of intra-regional exports. Nevertheless, the correlations show a marked increase over time for all pairs of countries except those paired with Nicaragua, and almost all the coefficients in 1985 are highly significant in a statistical sense. These results can be summarized by stating that the unweighted average of the rank correlations for extra-regional exports increased from 0.33 in 1970 to 0.42 in 1985. For intra-regional exports, the unweighted average for the same pairs of countries, excluding Panama, fell from 0.67 in 1970 to 0.58 in 1985.

The Central American countries resemble each other in both intra- and extra-regional exports because each country exports to extra-regional markets manufactures that are similar to those it exports to the regional market. The correlation coefficients between intra- and

extra-regional exports for each of the countries was in the 0.40 to 0.51 range in 1970 and increased to the 0.51 to 0.67 range in 1985 (table 10).

Another way to demonstrate the similarity of intra-regional exports is to calculate, for each of the 80 industries, the amount of "trade overlap", i.e., the exports and imports of a particular trade category that offset each other, and to express this as a percentage of trade turnover. Suppose, for example, that an industry in a country registers 35 000 pesos of intra-regional exports and 5 000 pesos of intra-regional imports. The trade overlap would then amount to 10 000 pesos which, expressed as a percentage of the 40 000 peso trade turnover, is 25%. This is an index of what has come to be known as "intra-industry trade", the simultaneous export and import of goods classified in the same industry or commodity category.⁷

The estimates for intra-regional trade indicate that intra-industry trade, as a percentage of trade turnover, fell in every country other than Panama between 1970 and 1985. For Central America and Panama as a whole, intra-industry trade fell more than 10 percentage points, to 43% in 1985. Only 37.7% of Panama's trade in manufactures with Central America was intra-industry in 1970, but in 1985 Panama's index was 47%, second only to Costa Rica's 53% (table 11).

The indices of intra-industry trade are much lower for trade with third countries than they are for trade within the preferential trading area of Central America and Panama. The indices also remain far below those of the newly industrialized countries (NICs) of Latin America and Asia,⁸ even though they rose markedly in Costa Rica and El Salvador between 1970 and 1985. Because of the increased intra-industry trade, of these two countries, the weighted average index for extra-regional trade in Central America rose from 6% in 1970 to 10% in 1985.

⁷The term "trade overlap" is due to J.M. Finger, "Trade Overlap and Intra-Industry Trade", *Economic Inquiry* 13, 1975, pp. 581-589, and this index of intra-industry trade was suggested by H.G. Grubel and P.J. Lloyd in *Intra-Industry Trade*, Macmillan, London, 1975, p. 21.

⁸See G.G. Manrique, "Intra-Industry Trade between Developed and Developing Countries: the United States and the NICs", *Journal of Developing Areas* 21:4, July 1987, pp. 481-494.

Table 11
CENTRAL AMERICAN ISTHMUS:
INTRA-INDUSTRY TRADE IN MANUFACTURES

(Percentages)

	1970	1975	1980	1985
Intra-regional trade				
Central American				
Isthmus	53.6	54.3	47.7	43.3
Costa Rica	60.9	61.2	65.0	53.0
El Salvador	56.2	61.0	53.4	43.6
Guatemala	59.8	55.6	41.4	42.7
Honduras	38.1	39.5	42.9	35.1
Nicaragua	45.8	42.5	28.3	21.6
Panama	37.7	51.9	47.8	47.2
Extra-regional trade				
Central America	6.2	7.8	8.6	10.3
Costa Rica	2.5	6.6	7.5	13.5
El Salvador	4.8	10.0	12.3	14.7
Guatemala	10.2	7.3	10.2	10.6
Honduras	8.7	10.2	5.8	6.3
Nicaragua	4.8	5.7	8.0	5.9

Source: Calculations of the author based on official statistics.

Note: Extra-regional export data were not available for Panama.

In Central America, as in any small economy, exports are much less diversified than imports of manufactures. The increase in intra-industry trade with outside countries thus reflects increasing diversification of exports, so that exports of manufactures are coming to resemble imports of manufactures. In 1970 Central American countries registered extra-regional exports in 41 industries, on average; in 1985 all countries sold outside the region goods from 54 industries on average. As a result of this diversification, exports are much less concentrated in a few industries.

In 1970 three industries accounted for proportions of extra-regional exports of manufactures ranging from 71% in Guatemala to 90% in Costa Rica. Especially important were "manufactures" such as chilled beef and frozen shrimp. By 1985, the concentration of exports was substantially lower for all five countries. Costa Rica and El Salvador—the two countries with the greatest increase in intra-industry trade ratios—also show the greatest fall in the con-

Table 12
CENTRAL AMERICA: LEADING THREE INDUSTRIES IN
EXTRA-REGIONAL EXPORTS OF MANUFACTURES

(Percentages)^a

ISIC	Description	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua
1970						
	Total leading three	90.8	76.5	71.1	78.6	88.4
3111	Meat	55.0	...	35.6	25.7	54.9
3114	Seafood	4.2	27.6	...	...	12.3
3115	Vegetable oil	...	10.1	...	...	...
3118	Sugar	31.6	38.8	27.3	...	21.2
3311	Wood	...	...	...	39.8	...
3529	Other chemicals	...	...	8.2	...	...
3530	Petroleum refining	...	...	...	13.1	...
1985						
	Total leading three	48.0	54.7	66.6	65.6	71.7
3111	Meat	29.6	...	14.1	...	35.3
3114	Seafood	10.9	25.5	8.3	29.2	...
3118	Sugar	7.5	15.6	44.2	15.6	23.8
3121	Other food products	...	...	...	...	12.6
3211	Textiles	...	13.6	...	...	...
3311	Wood	...	...	...	20.8	...

Source: Calculations of the author based on official statistics.

Note: The absence of an entry does not indicate the absence of exports, but rather that the industry does not rank among the leading three exporters. Extra-regional exports exclude exports to Panama.

^aPercentages of total extra-regional exports.

centration of their exports. The share of the leading three industries in Costa Rica's exports fell from 90% to 48%, and in El Salvador's from 76% to 55% (table 12).

In summary, the intra-regional exports of the Central American countries have always been diversified and similar in pattern from one

country to another. They are now beginning to diversify their exports of manufactures to countries outside the region, and in each country the pattern is beginning to resemble somewhat that of extra-regional imports and, to a much greater extent, the pattern of the extra-regional exports of other Central American countries.

IV

Protection and trade

The intent of the common external tariff agreed among the Central American countries in the 1960s was undoubtedly to protect their manufacturing industries against competition from imports from countries outside the region. "Centroamérica, al construir el Mercado Común, enunció desde el principio una política de industrialización y desarrollo, 'hacia adentro', y como parte de ésta se concibieron distintos instrumentos, de los cuales el más importante fue un arancel de clara orientación proteccionista, unido al régimen de libre comercio."⁹ Nevertheless, students of Central American integration believe that much of this protection has never been utilized. They suspect that Central American producers sell their goods at prices considerably lower than the CIF import price plus tariff. To the extent that this is true, the tariffs may contain considerable "water" and could be reduced with no effect on domestic output, imports or consumption.

Central American producers may fail to price up to the tariff for a number of reasons. First, they may price their products lower than the tariff-inclusive international price because of real or perceived quality differences between their products and those of foreign producers. Second, they may maintain low prices as a hedge against a future fall in import prices. Third, they may find themselves competing with contraband that does not pass through the customs house. Fourth, they may face competition from duty-free imports authorized by governments,

especially if they are producing capital goods or intermediate goods. Fifth, competition among the region's producers may force prices of Central American products down, so that imported goods are no longer attractive to the consumer. Only this last case is a true example of tariff redundancy, of water in the tariff. In the first two cases, any reduction in tariff rates would allow importers to gain market share at the expense of the region's producers, while the second two cases are examples of erosion of the legal tariff resulting from duty exemptions or smuggling activity.

Owing to a dearth of price comparisons between Central American products and imports (or potential imports), no study has yet been undertaken of the structure of actually utilized protection, although there are a number of studies of the structure of legal protection. Such a study done recently for Costa Rica¹⁰ is exceptionally careful and detailed and has the advantage of calculating not only the legal rate of protection, but also what the author calls a "real" rate of protection when tariff exemptions are taken into account.

It is not clear which tariff —legal or real in the Costa Rica study— is most relevant for our purposes. The legal tariff on textiles (ISIC category 3211), for example, was 46% in 1982, but importers were exempted from payment of well over half the duties in that year, so the duties collected as a proportion of the value of extra-regional imports was only 19%.

⁹SIECA, *El desarrollo integrado de Centroamérica en la presente década* (BID/INTAL, Buenos Aires, 1974), vol. 4, p. 38.

¹⁰Marvin Taylor D., *Estructura de la protección al sector industrial en Costa Rica* (DISEGRAF, Fernández Arce), San José, Costa Rica, 1984.

This 19% rate is regarded as the "real" tariff in the Costa Rica study, but no one actually paid it. Manufacturers of clothing enjoyed a zero rate of duty because imports for further processing were generally exempt. Stores purchasing cloth for direct sale to the consumer paid the full legal tariff, i.e., 46%. The 19% "real" rate is thus an average applicable to two very different types of consumer. Perhaps both rates should be used: the low one in calculating effective rates of protection of the clothing industry and the higher one in calculating nominal and effective protection of the textiles sold to final users. This possibility was not considered by the author of the Costa Rica study, so the "real" rate (19% in the case of textiles) is used, even though this underestimates the tariff protection.

The way in which the average tariff for each industry was estimated in the Costa Rica study also underestimates the real protection rate. In the absence of detailed data for consumption or production of individual products, imports were used as weights to obtain average rates of protection in each four-digit ISIC industry. Import weights are generally suspect for this purpose because imports are affected by tariff protection: high tariffs, which do a good job keeping out imports, receive low weights; but what is more, prohibitive tariffs receive zero weights. Nevertheless, it is quite possible that the author used *total* imports rather than *extra-regional* imports as weights. In this case, there would be no systematic tendency to underestimate protection, for high tariffs result in a diversion of trade from extra-regional to regional suppliers.¹¹

Taking the estimates of the "real" rate of protection of each Costa Rican industry in 1980 and 1982 as data, table 13 reports the results of weighting each rate by five different variables: production, intra-regional imports, intra-regional exports, extra-regional imports and extra-regional exports. Tariff rates were generally lower in 1982 than in 1980 because the Costa Rican government removed a number of import surcharges and import deposit requirements following a sharp devaluation of the national currency.

¹¹If total imports were used as weights, this could explain the lack of any significant correlation between nominal protection and imports within each four-digit industry. See Marvin Taylor, *op. cit.*, pp. 37-42.

Table 13
COSTA RICA: NOMINAL AND EFFECTIVE
RATES OF PROTECTION
(Weighted averages)

Weight	Nominal protection		Effective protection	
	1980	1982	1980	1982
Production	38.0	31.5	186.6	183.3
Intra-regional				
Imports	32.1	24.3	135.0	120.0
Exports	31.0	26.0	136.9	111.5
Extra-regional				
Imports	24.8	20.2	126.3	104.1
Exports	33.3	29.9	153.7	270.3

Source: Calculations of the author based on official trade and production statistics and estimates of nominal and effective protection (Corden method) in Marvin Taylor Dormond, *Estructura de la protección al sector industrial en Costa Rica* (DISEGRAF Fernández Arce, San José, 1984).

Note: In an attempt to weight tariffs by trade and output at free trade prices, intra-regional trade and output destined for domestic or regional markets was deflated using the nominal tariff of the corresponding 4-digit ISIC category. Intra-regional trade is trade with other Central American countries and Panama.

Raw materials and inputs for industry tend to have very low tariffs or to be exempted from payment of tariffs. Thus the effective rate of protection, i.e., protection of industrial value-added, shown in table 13, tends to be much higher than the nominal rate of protection. Furthermore, average protection—both nominal and effective—is lower when weighted by intra-regional trade than when weighted by production. This indicates that the manufactures traded within the region tend to receive somewhat less protection than those destined for home markets. Weighting each industry's rate by extra-regional imports reduces average protection, because high tariffs discourage imports. Surprisingly, average protection when weighted by extra-regional exports is nearly as high as when weighted by production. In one case—effective protection in 1982—the extra-regional export-weighted average rate actually exceeds the production-weighted rate by a considerable margin. If tariff protection is a disincentive to export, one would expect extra-regional exports, in the absence of subsidies to be concentrated in industries with low rates of protection.

Table 14
COSTA RICA, EL SALVADOR, GUATEMALA AND NICARAGUA:
NOMINAL AND EFFECTIVE RATES OF PROTECTION

(Weighted averages)

	Costa Rica		El Salvador		Guatemala		Nicaragua	
	Nominal	Effective	Nominal	Effective	Nominal	Effective	Nominal	Effective
Production	42.1	90.9	...	...	39.4	86.6	...	...
Intra-regional								
Imports	38.3	86.1	37.9	82.0	35.9	76.8	35.9	73.6
Exports	35.6	74.4	38.9	85.0	35.9	78.4	32.6	67.9
Extra-regional								
Imports	31.4	60.3	31.7	64.6	30.8	61.2	30.1	58.6
Exports	41.8	100.1	46.3	93.2	39.9	89.1	40.6	106.9

Source: Calculations of the author based on data from SIECA and each country.

Note: Output and trade data are for the year 1985, but the new external tariff was not implemented until 1986. In an attempt to weight tariffs by trade and output at free trade prices, intra-regional trade and output destined for domestic or regional markets was deflated using the nominal tariff of the corresponding 4-digit ISIC category. Disaggregate production data were not available for El Salvador or Nicaragua. Intra-regional trade is trade with other Central American countries and Panama.

In 1985 the four members of the Central American Common Market agreed on a new Common External Tariff that was implemented in three countries in 1986 and in the fourth (Nicaragua) in 1987. SIECA has made some rough estimates of nominal and effective protection for four-digit ISIC industries, so it is possible to repeat the same exercise of alternative weighting schemes for each of the four countries. It is important to emphasize that these calculations, reported in table 14, are not comparable with those of table 13 for two reasons: first, and most important, the SIECA calculations start from an unweighted average tariff of all final goods and of all inputs, unlike the import-weighted procedure used in the Costa Rica study; secondly, the Common External Tariff does not cover all industries, and those industries that are subject to national discretion are excluded from the calculations.

The results using estimated rates of the new Common External Tariff coincide with the findings for Costa Rica in 1980 and 1982. Average rates of protection weighted by intra-regional trade are lower than those weighted by production. Protective rates weighted by extra-regional imports are even lower, but those weighted by extra-regional exports are highest of all.

That extra-regional export-weights should produce the highest estimate of protection would appear to be counter-intuitive. Nonetheless, there are three possible explanations for

this result, and they are not mutually exclusive. First, it may be evidence of considerable "water" in the external tariff: producers in export industries are competitive and have no need for the high protection accorded their activities. Second, producers may price discriminate between regional and extra-regional markets, charging local consumers for the fixed cost of production and employing lower, marginal cost prices in competitive export markets. Third, and most important, the four-digit ISIC industries are very heterogeneous, so exports and imports (or potential imports) are often very distinct products. Consider, for example, ISIC 3114 "Canning, Preserving and Processing of Fish, Crustacea and Similar Foods". This industry enjoys extremely high rates of protection, yet also registers high levels of extra-regional exports. The exports, however, consist largely of frozen shrimp, whereas imports cover a wide range of goods from salted cod to smoked oysters and caviar. Those who freeze and export shrimp need no protection at all, whereas factories processing tuna and sardines for the local market may require considerable protection in order to compete with imports.¹²

¹²The effective rates of protection for the seafood industry were infinite in 1980 and 1982, implying negative value-added when inputs and outputs are measured at free-trade prices. In this case—and all other cases of extremely high protection—I arbitrarily used a protective rate of 500% in the calculations reported in table 13.

V

Summary and conclusions

In the 1960s Central American manufacturing grew rapidly by producing locally goods that were previously imported from outside the region. By the end of that decade, possibilities of import substitution were generally considered to be exhausted and the ratio of extra-regional imports to apparent consumption of manufactures ceased to fall in the 1970s and 1980s.

Most of the industries producing simple consumer goods such as beverages, tobacco, clothing, shoes, wood and furniture now have extremely low ratios of extra-regional supply, so further import substitution will have to come from capital and intermediate goods. Textiles is an exception in that it is one light industry where there is room for import substitution. Extra-regional imports supply nearly a third of the textiles consumed in Central America even though there is considerable excess capacity in this industry. This meagre import substitution in textiles compared with other simple manufactures did not occur by accident: textiles are inputs for the clothing industry, and the governments of Central America have followed a policy of tariff exemptions for the importation of inputs. Nonetheless, the new Common External Tariff has eliminated the practice of granting this type of tariff exemption, and this should encourage greater substitution for imports of textiles.

In the 1970s manufacturing grew at a slower pace than it had in the previous decade, but it continued to grow more rapidly than other sectors of the Central American economy. Nonetheless, it was internal demand and not import substitution that fueled the growth of manufacturing. The ratio of extra-regional imports to consumption of manufactures actually rose in this period, and there was little promotion of exports of manufactures to markets outside the region. The model of industrialization based on the substitution of imports in an expanded market began to falter, and this became most evident in the crisis of the 1980s.

During the decade of 1970-1979 intra-regional trade began to contract in relative terms and the contraction accelerated after 1980. With

the loss of markets in neighbouring countries, and given the absence of incentives to export to countries outside the region, the industrialists of Central America turned to their home markets. In 1970, they sold 75% of their production to local consumers. In 1985 this proportion increased to 83%.

Although the Central American Common Market has not been transformed into a platform for exporting manufactures to the rest of the world, there have been some gains in the last two decades. All five countries now export a much wider range of manufactures than they did a few years ago. In intra-regional trade the structure of exports in each country has always been similar to that of their imports. This similarity is now becoming a feature of extra-regional trade in manufactures as well. Moreover, exports of manufactures to third countries are very similar to exports to countries of the region. This suggests the possibility that producers have learned to export in the protected Central American market and, with some incentives, could turn to extra-regional markets.

Lack of success in promoting extra-regional exports of manufactures is usually attributed to a high level of tariff protection. Tariffs allow the Central American manufacturer to sell high cost, low-quality products at high prices and make exports to competitive overseas markets unattractive. If this is true, one would expect the average protection for those manufactures that are exported to be much lower than protection for goods sold in the regional market.

Surprisingly, the available data appear to indicate that extra-regional exports of manufactures receive, on average, higher rates of protection than intra-regional exports. This might be interpreted as evidence of a lot of "water" in the external tariff: Central American industrialists produce at low cost and have no need for such high rates of tariff protection. It is also very likely that this result is due, at least in part, to statistical shortcomings. At the available level of disaggregation (four-digit ISIC) industries are

very heterogenous, so that very dissimilar products are included. The seafood industry (ISIC 3114), for example, has a high rate of protection but is also a big exporter. A detailed analysis of this industry shows that exports are mainly of frozen shrimp, while imports include more highly processed products, especially canned goods. Although it is true that shrimp exports do

not need protection, canned tuna and sardines may require high protection if they are to survive. The rates of protection employed for the present study, are averages for entire industries. Further research is needed with disaggregated data and, preferably, comparisons of Central American prices with international prices, and not just legal tariffs.

Appendix

Sources of manufacturing growth

Consider the following accounting identity:

$$(1) Q = D + X - M,$$

where Q is the output or production of an industry, D is home demand or apparent consumption, X represents exports and M is imports. Let the absence of import substitution be represented by a constant ratio m of imports to apparent consumption:

$$(2) m = M/D = M / (Q - X + M).$$

Similarly, let us assume that the absence of export promotion requires constancy of the ratio of exports to local production:

$$(3) x = X / Q.$$

Once we have values for apparent consumption and output in a base year and a terminal year, observed changes in imports and exports (ΔM and ΔX) can be divided in to changes attributable to growth in demand or production (ΔD or ΔQ) and changes attributable to changes in the ratios m and x . It is easily shown that a change in imports is identically equal to the sum of two terms:

$$(4) \Delta M = m_0 \Delta D + (m_1 - m_0) D_1.$$

The first term on the right is the import ratio in the base year (m_0) multiplied by the change in demand, whereas the second term is the change in the import ratio multiplied by consumption in the terminal year (D_1). The first term is thus the "expected" growth of imports given growth of domestic demand, whereas the second is a measure of import substitution, i.e., the deviation of imports from their expected level. Similarly, the observed change in exports is equal to expected export growth plus a measure of export promotion:

$$(5) \Delta X = x_0 \Delta Q + (x_1 - x_0) Q_1.$$

Expected exports equal the base period export ratio times the change in output, whereas export promotion is the change in the export ratio times the output of the terminal year.

Equation (1) can also be written in deviation or change form,

$$(6) \Delta Q = \Delta D + \Delta X - \Delta M,$$

where $\Delta Q = Q_1 - Q_0$, $\Delta D = D_1 - D_0$, $\Delta X = X_1 - X_0$, and $\Delta M = M_1 - M_0$.

Substituting the expressions of equations (4) and (5) for ΔM and ΔX ,

$$(7) \Delta Q = (1 - m_0) \Delta D + x_0 \Delta Q - (m_1 - m_0) D_1 + (x_1 - x_0) Q_1.$$

The first two terms on the right-hand-side (R.H.S.) of equation (7) represent the change in output attributable to "expected" growth of consumption and exports; their sum is the change in output consistent with constant trade ratios. The third term is a measure of import substitution and carries a negative sign, since a decrease in the import ratio has a positive effect on local production. The last term measures the contribution of export promotion (an increase in the export ratio) to overall growth.