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THE PATTERN OF TRADE AND SPECIALISATION IN THE CENTRAL AMERICAN COMMON MARKET*

The purpose of this paper is to analyse the structural changes and pattern of specialisation that followed the formation of the Central American Common Market (CACM) in the early 1960s. In the first section it is shown that the fear did exist that trade-creating and "backwash" effects would dominate as a result of unrestricted free trade in the region. In sections two and three, evidence is presented to suggest that these fears have proved to be largely unfounded. The operation of market forces has led to an unplanned reciprocal exchange of manufactures for manufactures and non-manufactures for non-manufactures. Moreover, most of the structural changes within the manufacturing sector appear to have taken the form of intra-industry specialisation, i.e. specialisation in the differentiated products of an industry with no need to abandon entire high-cost industries.

Of the five member countries of the CACM, Costa Rica shows the greatest degree of intra-industry trade in manufactures and Honduras the lowest. Elsewhere (Willmore, 1973) it has been shown that these two countries are the only ones for which there is statistically significant evidence of trade creation. The implications of these findings for the "balanced growth" of the region are discussed in a concluding section of the paper.

1. The Fear of Trade Creation

Orthodox customs union theory emphasises the gains to be obtained when trade creation causes a country to shift its resources from import-competing industries to export-oriented industries in which it has at least an intra-union comparative advantage.¹ But trade creation has been feared rather than welcomed in member countries of the CACM. The expectation of resource re-allocation and a decline in manufacturing activity has been a serious obstacle to the integration movement in some of the Central American countries.

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1. This is true even of the 'new' approach to customs union theory, which treats industrialisation as a public good. See, for example, Cooper and Massell (1965).

Because potential participants feared the resource re-allocation that might follow in the wake of trade creation, the supporters of economic integration in the 1950s stressed the principle of reciprocity. Each member country was to be assured of benefits through industrial programming, i.e. the geographic allocation of manufacturing activities on an equitable basis. Intra-regional free trade was to apply not to all products, but only to those for which there existed prior agreement on the location of production. To quote an early ECLA document,

“For practical reasons, it is not possible at this time to form a complete economic union, even though this is the historic aspiration of the Central American republics. . . . Such a union would imply free trade among the five countries, and it would thus be necessary to abandon some high-cost economic activities in order to place them in locations that are preferable from the point of view of the region as a whole. Without denying the possibility that such a goal might be feasible in the future, one must conclude that the short-run objectives should be more modest. The concept of economic integration that seems adequate for Central America is that of limited integration accompanied by a policy of commercial and industrial reciprocity.” (Prebisch, 1952, p. 106).

Moreover, the emphasis was on potential *diversion* of trade away from third countries through accelerated import substitution on a regional level. One of the early promoters of Central American integration notes, for example, that “since we knew very well that the vested interests in each country, especially those interests attached to a number of high-cost industries, were not going to show much support for free trade, we emphasised new industries which did not yet exist in the region.” (Sol, 1972, p. 77. See also Prebisch, 1952, especially section III.)

The Managua Treaty of December 1960 abandoned this principle of reciprocity. Priority was given to the formation of a free trade area in which all goods produced in the region would circulate freely, and this goal was achieved within a short period of time for manufactured goods. Unrestrained free trade within the region gave rise to the possibility of trade creation and to the decline of some import-competing activities in member countries.

Not all countries were prepared to abandon the principle of reciprocity in 1960. Honduras delayed ratification of the Treaty until 1962, and Costa Rica at first declined to sign the Managua Treaty because of protectionist fears. Lic. Jorge Borbon, who was then Costa Rica's minister of economics, defended his government's decision to remain aloof from the CACM on the grounds that (i) the Central American economies are not complementary, but competitive, so existing industries with a comparative disadvantage will be eliminated, and (ii) manufacturing activity will become concentrated in Guatemala and El Salvador because of lower labour costs, more abundant

capital and proximity to markets (Borbon, 1961, pp. 3–36.) This thesis of inter-industry and inter-sectoral specialisation was accepted by Staley, who, in a criticism of Borbon's thesis, did not deny that "some reallocation of resources would be necessary and to that extent some Costa Rican industry might be curtailed", but stressed that "along the lines of the comparative cost doctrine, some other industry would be expanded" (Staley, 1962, pp. 124–25). In addition, Staley suggested that Costa Rica, along with Guatemala and El Salvador, had the greatest potential for industrialisation:

"The Central American region has the potential to develop in time into a region of complementary countries with Costa Rica, Guatemala and El Salvador producing different types of industrial goods. *Honduras and Nicaragua will continue as suppliers of food and materials.*" (*ibid.*, emphasis added.)

2. The Structure of Intra-Regional Trade: Reciprocity without Planning

The early promoters of Central American integration felt that the principle of reciprocity, and particularly the reciprocal exchange of manufactures, would be grossly violated in the absence of controls on the intra-regional flow of goods. Surprisingly, however, the free play of market forces has resulted in considerable reciprocity in trade flows *without* planning at the regional level.

This increasing "intra-sectoral" trade can best be shown with the use of a technique invented by Hirschman (1945, ch. 7). Commodity trade data are grouped into two sectors: manufactures and non-manufactures. Non-manufactures include processed food, which dominates this sector in intra-CACM trade. The total intra-regional export plus import trade is then divided into four categories: (i) exchange of manufactures for manufactures, (ii) exchange of non-manufactures for non-manufactures, (iii) exchange of manufactures for non-manufactures, and (iv) the intra-regional trade imbalances. The fourth category is a residual, and might be conceived of as an exchange of intra-regional imports (exports) for invisibles and extra-regional exports (imports). Each of these categories of exchange is then expressed as a percentage of total intra-regional (export plus import) trade.²

2. More formally, let X represent the c.i.f. value of intra-regional exports and M the c.i.f. value of intra-regional imports of a country, where the subscripts '1' and '2' refer to manufactures and non-manufactures respectively. The exchange of manufactures for manufactures as a proportion of total intra-regional trade is then

$$\left[\frac{\Sigma(X_1 + M_1) - \Sigma|X_1 - M_1|}{\Sigma(X + M)} \right] 100$$

and the summation (Σ) is over five countries. Similarly, the exchange of non-manufactures for non-manufactures is

$$\left[\frac{\Sigma(X_2 + M_2) - \Sigma|X_2 - M_2|}{\Sigma(X + M)} \right] 100$$

(continued overleaf)

Table 1
Central America: Percentage Distribution of Total Intra-Regional
Trade by Type of Exchange, 1961-71.

Year	(1)	(2)	(3)	(4)	Total
1961	38	38	15	9	100
1962	34	37	16	13	100
1963	37	37	16	10	100
1964	47	31	11	11	100
1965	47	28	14	11	100
1966	50	24	11	15	100
1967	50	28	1	21	100
1968	51	24	4	21	100
1969	57	19	5	19	100
1970	59	16	6	19	100
1971	62	16	5	17	100

Column (1): Exchange of manufactures for manufactures.
 Column (2): Exchange of non-manufactures for non-manufactures.
 Column (3): Exchange of manufactures for non-manufactures.
 Column (4): Intra-regional trade imbalances (surpluses and deficits).

Note: Manufactures are defined as sections 5-8 of the Central American Uniform Customs Nomenclature (NAUCA). Non-manufactures consist primarily of agricultural commodities and processed food. All data refer to c.i.f. values in current prices.

Sources: SIECA; *Carta Informativa* 11 (September 1962), 18 (April 1963), and 30 April 1964); *Anuario Estadístico Centroamericano de Comercio Exterior* 1964-1971 inclusive.

The results of this set of calculations for the years 1961 through 1971 are reported in Table 1. It should be noted, however, that intra-regional trade flows were disrupted by the conflict between Honduras and El Salvador in 1969 and by Honduras' withdrawal from the CACM at the end of 1970. By 1968, the last year of 'normal' trade flows, 51 per cent of intra-regional trade consisted of exports (imports) of manufactures in exchange for imports (exports) of manufactures. The comparable figure in 1961 was only 38 per cent. The statistics of Table 1 demonstrate, in short, that the degree of 'reciprocity' in the manufacturing sector of the CACM has increased over

2 (continued)

the exchange of manufactures for non-manufactures

$$\left[\frac{\Sigma |X_1 - M_1| + \Sigma |X_2 - M_2| - \Sigma |X - M|}{\Sigma (X + M)} \right] 100$$

and the trade imbalances

$$\left[\frac{\Sigma |X - M|}{\Sigma (X + M)} \right] 100$$

time. Moreover, the exchange of manufactures for manufactures represents a larger proportion of intra-regional trade than does any of the other three categories after 1963, and a larger proportion than the other three categories combined after 1967.

The exchange of non-manufactures for non-manufactures (column 2 of Table 1) declined as a proportion of total trade in the 1961–71 period, but this is understandable since intra-regional imports of non-manufactures as a proportion of total intra-regional imports declined steadily from 53 per cent in 1961 to 24 per cent in 1971. The declining importance of the exchange of non-manufactures for non-manufactures roughly offsets the increasing importance of the exchange of manufactures for manufactures in the period, for the sum of these two types of exchange (column 1 plus column 2) fluctuates between 71 and 79 per cent with no noticeable trend.

The most interesting result of the calculations reported in Table 1 is that a pattern of trade based on specialisation in manufactures or agriculture failed to emerge. The exchange of manufactures for non-manufactures represents a low and declining portion of total intra-regional trade throughout the 1961–71 period (see column 3). The importance of intra-regional trade imbalances did, however, increase over the period (see column 4). One might well argue that in the absence of protectionist agricultural policies, Nicaragua and Honduras would have registered lower deficits in their intra-regional trade, i.e. that they would have exchanged non-manufactures for manufactures instead of for a trade deficit. Nevertheless, it is significant that the sum of columns 3 plus 4 – the residual after accounting for all intra-sectoral exchange – does not show any increasing trend over time, and in no year accounts for more than 29 per cent of total trade.

The distribution of total intra-regional trade by type of exchange is reported in Table 2 for member countries of the CACM.³ In a number of cases, no exchange of manufactured exports (imports) for non-manufactured imports (exports) is registered. This occurs when a country has a trade surplus or trade deficit in each sector. Details are best presented in the table itself, but three salient features should be noted.

First, in each country the exchange of manufactures for manufactures represents an increasing proportion of total intra-regional trade over time. But in Honduras, and to a lesser extent in Nicaragua, this category of exchange is less important than in other member countries. Since in each year Honduras and Nicaragua present trade deficits in manufactures, to this extent the pattern of trade provides some evidence of a relative lag in the industrialisation of these two countries.

3. The algebraic formulas used for these calculations are identical to those given in the previous footnote except, of course, that the summation operator (Σ) may be deleted.

Table 2
 Central America: Percentage Distribution of the Intra-Regional
 Trade of Member Countries by Type of Exchange,
 1961-71.

Year	(1)	(2)	(3)	(4)	Total
<i>Guatemala</i>					
1961	58	33	1*	8	100
1962	45	40	7	8	100
1963	39	41	1	19	100
1964	55	35	4	6	100
1965	60	30	0	10	100
1966	57	20	0	23	100
1967	55	23	0	22	100
1968	57	15	0	28	100
1969	61	13	0	26	100
1970	62	14	0	24	100
1971	68	14	0	18	100
<i>El Salvador</i>					
1961	39	41	19	1**	100
1962	38	38	15	9**	100
1963	46	37	9	8**	100
1964	56	32	7	5**	100
1965	49	29	18	4	100
1966	54	25	18	3	100
1967	50	31	3	16	100
1968	52	23	13	12	100
1969	59	18	14	9	100
1970	63	14	12	11	100
1971	68	14	6	12	100
<i>Honduras</i>					
1961	16	36	35*	13	100
1962	15	28	36*	21	100
1963	16	33	51*	0	100
1964	21	32	46*	1	100
1965	24	30	39*	7**	100
1966	29	33	18*	20**	100
1967	33	40	0	27**	100
1968	34	40	2*	24**	100
1969	43	28	0	29**	100
1970	35	17	0	48**	100
1971	20	30	0	50**	100

Table 2 (continued)

Year	(1)	(2)	(3)	(4)	Total
<i>Nicaragua</i>					
1961	27	49	0	24**	100
1962	28	55	0	17**	100
1963	32	33	9*	26**	100
1964	40	25	0	35**	100
1965	39	24	0	37**	100
1966	40	25	0	35**	100
1967	38	23	0	39**	100
1968	42	30	0	28**	100
1969	48	24	12*	16**	100
1970	58	21	21*	0	100
1971	53	21	21*	5**	100
<i>Costa Rica</i>					
1961	45	20	0	35**	100
1962	37	34	0	29**	100
1963	45	36	15	4	100
1964	43	22	4	31	100
1965	52	24	11	13	100
1966	62	20	14	4	100
1967	71	22	2	5**	100
1968	64	21	0	15**	100
1969	65	17	0	18**	100
1970	66	17	0	17**	100
1971	62	13	0	25**	100

Column (1): Exchange of manufactures for manufactures.

Column (2): Exchange of non-manufactures for non-manufactures.

Column (3): (*) indicates exports of non-manufactures in exchange for imports of manufactures; the absence of an asterisk indicates exports of manufactures in exchange for imports of non-manufactures.

Column (4): (**) indicates a deficit in the balance of intra-regional trade; otherwise a trade surplus is indicated.

Sources: See Table 1.

A second and closely related point is that for Costa Rica the exchange of manufactures represents a consistently high proportion of total intra-regional trade. Indeed, in the years 1966-70 this category of exchange is more important in the intra-regional trade of Costa Rica than in the intra-regional trade of any of the other four countries. This contrasts sharply with Honduras, which, compared to partner countries, consistently shows the lowest figure for this category as a proportion of total intra-regional trade. Given that both Costa Rica and Honduras have a preference for manufacturing activity, it is perhaps understandable that the former has been reasonably content with the integration scheme while the latter chose to erect import barriers to intra-regional trade at the end of 1970.

A third and final observation is that three countries – Nicaragua, Honduras after 1964 and Costa Rica after 1966 – show sizeable deficits in their intra-regional balance of trade. But the reason for the existence of a deficit is distinct in each case. Honduras experienced a boom in traditional exports in the past decade, with the growth of extra-regional exports receipts averaging 9.7 per cent per annum in 1961–68 compared to 1.2 per cent in 1951–60. (Rosenthal Report, appendix 1, table 10.) It is debatable whether these traditional exports are a cause or consequence of the intra-regional trade deficit, but traditional exports did allow Honduras to maintain a sizeable intra-regional trade deficit with no pressure on the overall balance of payments. In Nicaragua, trade diversion (i.e. the replacement of extra-regional imports by intra-regional imports) combined with increasing exports of cotton and beef to third countries permitted an intra-regional trade deficit with only moderate pressure on that country's balance of payments in the 1960s. Costa Rica, however, faced serious balance of payments problems by the end of the 1960s. These problems resulted from an expansionary monetary policy combined with a fixed, hence increasingly overvalued, exchange rate. Nevertheless, it was not until July 1972 that partner countries allowed Costa Rica to devalue its currency with respect to the Central American peso, a unit of account equal to the U.S. dollar.

In summary, contrary to *a priori* expectations, a pattern of specialisation in manufactures or non-manufactures has not emerged in the CACM. In each member country, the exchange of manufactures for manufactures represented an increasing proportion of total intra-regional trade in the 1961–69 period.

3. Intra-Industry Trade and Specialisation

In the preceding section, it was shown that the pattern of intra-regional trade in Central America is not based on inter-sectoral specialisation. Moreover, by the end of the last decade more than half of total intra-regional trade consisted of an exchange of manufactures for manufactures. The purpose of the present section is to demonstrate that within the manufacturing sector each member country was able simultaneously to produce, export and import commodities that are close substitutes in production and consumption. This pattern of trade in manufactures suggests the existence of intra-industry rather than inter-industry specialisation.

3(a) The Concept of Intra-Industry Trade

A number of studies have shown that in European countries, post-war trade liberalisation has led to an increase in simultaneous exports and imports of manufactures belonging to the same "industry" or commodity category.⁴

4. See Verdoorn (1960), Balassa (1966) and Grubel (1967).

This phenomenon, known as "intra-industry trade", has also been found to exist in the U.S.A., the U.S.S.R., Canada and Australia.⁵ Grubel (1967, 1970) has provided an excellent theoretical explanation of the phenomenon. Essentially, the explanation differs depending upon whether the commodities in question are perfectly homogeneous or differentiated but still close substitutes in consumption or production.

Explanations of intra-industry trade in homogeneous goods include minimisation of transport costs, joint production of services, such as shipping, with another traded product, and seasonal fluctuations in output or demand, as is common in the case of fresh fruits and vegetables.⁶ Only the first of these three explanations is relevant to trade in manufactures, and even this is more applicable to trade in primary products. Canada, for example, simultaneously exports crude oil to the U.S.A. and imports crude oil from Venezuela solely as a means of reducing transport costs. Nevertheless, intra-industry trade in some bulky manufactures such as bricks and cement might be explained in terms of reduced transportation costs.

In Central America, however, intra-industry 'border trade' is apt to increase rather than reduce transport costs, particularly when the trade is bilateral rather than triangular. Factories and markets are concentrated in or near the capital city of each of the five countries. Nearly all goods are shipped by land, and there are few ports of entry because of the short border and limited highway facilities between any two countries. Moreover, border crossings remain costly because of bureaucratic delays and the unloading of vans for a detailed inspection of contents.⁷

Despite the existence of formidable non-tariff barriers to the movement of goods, it is shown below that there is a high degree of intra-industry trade in cement, a bulky item with high transportation costs relative to the value of the commodity. The discovery of this trade suggests an explanation for intra-industry trade not considered by earlier writers, namely that monopolistic price discrimination can result in the 'cross-hauling' of identical goods across a common border. The producers no doubt argue that they are 'competing' in each others market by absorbing the costs of shipment to distant customers. But the costs of production including transport would be reduced if such trade were prohibited. Where monopolistic price discrimination exists, Grubel's (1970, p. 49) dictum that "the simple fact that intra-industry trade takes place among free market economies is sufficient evidence

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5. Grubel and Lloyd (1970), McMillan (1973), Lerner (1973) and Grubel and Lloyd (1971).
 6. Grubel (1970), pp. 36-37. He also includes government produced price distortions and entrepot and re-export trade as causes of intra-industry trade in homogeneous goods.
 7. For a discussion of these and other non-tariff barriers to intra-regional trade, see Rosenthal Report, appendix 2, section II-2.

that it increases world welfare since all parties to voluntary exchange benefit" is no longer valid.

In most cases, however, a country will register simultaneous exports and imports of manufactures that are differentiated rather than perfectly homogeneous. If the differentiation is by primary inputs, the products may be good substitutes in consumption but not in production. Shoes, for example, may be constructed from cloth, leather, rubber or plastic. The Heckscher-Ohlin theory may be useful in explaining intra-industry trade in such cases.

Products that are close substitutes in both production and consumption do, however, enter intra-industry trade. These products are differentiated not by primary inputs but rather by style, quality, appearance or 'brand image'. In such cases the 'Linder hypothesis' (Linder 1961) of comparative advantage based on domestic demand is more relevant than is the Heckscher-Ohlin model. There will be a consumption gain if intra-industry trade increases the variety of products in the market. There may also be a production gain from specialisation in a reduced variety of goods, particularly if economies of scale result from the lengthening of production runs.⁸

In sum, intra-industry specialisation, like classical inter-industry specialisation, permits a country to gain through more efficient production and exchange. But specialisation *within* national industries means that a country does not have to bear the cost of eliminating entire high-cost industries. When structural changes are required in the wake of trade creation, it is thus rational for a country to prefer that the changes occur in the form of intra-industry rather than inter-industry specialisation.

3(b) A Measure of Intra-Industry Trade in Manufactures

For the purposes of this paper, the manufacturing sector has been divided into fifty-two 'industries', most of which correspond to three-digit items of NAUCA, a trade classification that is based on the Standard International Trade Classification (SITC). In order to keep computations to manageable proportions, the pattern of intra-regional trade in manufactures is examined at only three points in time: 1961, 1968, and 1971. The first year is representative of substantial barriers to intra-regional trade; the second is the last year in which the CACM was functioning in a normal manner with trade among all five countries; and the last year illustrates the results of the complete absence of trade between Honduras and El Salvador combined with high tariff barriers for trade between Honduras and the remaining three countries.

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8. For a detailed theoretical discussion, see Grubel (1970). For evidence of scale economies resulting from intra-industry specialisation, see Daly *et. al.* (1968).
 9. The detailed data by country are available from the author on request.

Following a method first used by Balassa (1966), the absolute difference of exports and imports in each of the fifty-two commodity categories is calculated as a ratio of the sum of exports and imports in the same commodity category.⁹ A useful summary statistic is the average of these ratios of export-import balances, using as weights the relative size of the trade turnover (exports plus imports) of each commodity category in the total intra-regional trade turnover.¹⁰ *A priori* expectations were that these ratios would approach unity with the removal of tariff barriers to intra-regional trade, since a country would be forced to shift production from import-competing to export-oriented industries. In other words, a country was expected to demonstrate an intra-union comparative advantage or disadvantage in an activity, but not both. If, however, adjustment takes the form of intra-industry trade and specialisation, one can expect these ratios to approach zero following the liberalisation of intra-regional trade.

The results shown in Table 3 indicate that the freeing of trade has brought about an increase in intra-industry trade in the region. For the CACM as a whole, the weighted average ratio fell from .662 in 1961 to .452 in 1968 and dropped still further to .415 in 1971 when the union had only four participating members. In each of the five countries, the weighted average ratios decline over time, except in the case of Honduras due to its withdrawal from the union in 1970 and in the case of Costa Rica, which was facing a 'fundamental disequilibrium' in its balance of payments after 1967.

The contrast between Costa Rica and Honduras, both of which experienced significant trade creation, is quite remarkable. In 1968, the most representative year for intra-regional free trade, the ratio for Costa Rica is the lowest (.368) while that for Honduras is the highest (.547) of the five countries. This result suggests that in Costa Rica, to a much greater extent than in Honduras, the process of adjustment in the wake of trade creation has been relatively painless. In 1961 Minister Borbon feared that the structural adjustments resulting from entry into the CACM would be unbearable for his country. In 1973 Costa Rica's Industrial Commission lamented that structural changes have been limited and suggested that there is need for greater specialisation in production.¹¹

10. This summary statistic was suggested by Grubel and Lloyd (1971, p. 497). It should be noted that for a two commodity division it is equivalent to the exchange of one type of good for another type of good plus the intra-regional trade imbalance as defined in footnote 2 above. The statistical distribution of this measure has not been determined.

11. "Central America's industrial structure is more competitive than complementary, and specialisation has occurred, to a limited extent, in a very few cases." Comision Industrial, Comite de Alto Nivel (Costa Rica), "Planteamiento de Costa Rica sobre Politica Industrial Regional", mimeo, December 1973, p. 1. It should be noted that members of the Commission ignored the possibility that gains have been realised through intra-industry specialisation.

Table 3
Central America: Weighted Average Ratios of Trade Balances
in Manufactures, 1961, 1968 and 1971.

	1961	1968	1971
Guatemala	.664	.442	.351
El Salvador	.589	.426	.403
Honduras	.682	.547	.821
Nicaragua	.845	.538	.495
Costa Rica	.842	.368	.390
CACM	.662	.452	.415

Note: Ratios calculated as the weighted average of the absolute difference of exports and imports to the sum of exports and imports for 52 commodity categories, according to the following formula:

$$\frac{\sum_{i=1}^n |X_i - M_i|}{\sum_{i=1}^n X_i + \sum_{i=1}^n M_i}$$

where X_i and M_i refer to the intra-CACM exports and imports of the i th commodity category, and n is the number of categories considered. The weights are thus the trade turnover in each commodity category, and for the CACM as a whole $n = (52)(5) = 260$. Manufactures are defined as in the footnote to Table 1, and exclude foodstuffs. Calculated from c.i.f. values in current dollars, except for 1961 where exports are valued fob.

Sources: *Anuario de Comercio Exterior 1961* (Guatemala), *Anuario Estadístico 1961* (San Salvador), *Comercio Exterior 1961* (Tegucigalpa), *Memoria 1961* (Dirección General de Aduanas, Managua), *Comercio Exterior 1961* (San José), *Anuario Estadístico Centroamericano de Comercio Exterior 1968* and *1971* (Guatemala).

3(c) Specialisation and Trade Within Manufacturing Industries

In the absence of monopolistic price discrimination, one would not expect Central American countries to simultaneously export and import *identical* commodities. Given sufficiently disaggregate trade data, it should be possible in principle to determine the products in which a country shows a comparative advantage or disadvantage. In other words, appropriate disaggregation should yield commodity categories in which little or no 'intra-industry' trade is registered.

To test whether 'intra-industry' trade persists in the available disaggregate data, a weighted average ratio of 1971 Guatemalan export-import balances was computed using over 800 commodity categories at the seven and nine-

Table 4
Central America: Trade Balances in Manufactures by Commodity
Category, 1968. (weighted average ratios)

NAUCA	Description	Ratio *
611	Leather	.176
811-812	Plumbing, lighting	.194
661	Lime, cement	.220
654	Tulle, lace, embroidery	.223
533	Pigments, paints and varnishes	.260
899	Miscellaneous manufactures, nes.	.264
841	Clothing	.276
699	Metal manufactures	.278
511	Inorganic chemicals	.334
599-other	Chemical materials and products, nes	.343
629	Other rubber articles	.344
599-01	Plastic materials	.362
732	Automotive	.362
721	Electrical machinery, batteries	.371
652	Woven cotton fabrics	.374
552-other	Soap and cleansers	.378
621	Materials of rubber	.384
712	Agricultural machinery	.390
681	Iron and steel	.398
552-01	Perfumery and cosmetics	.419
541	Medical and pharmaceutical products	.422
891	Musical instruments, records	.428
653	Other woven textile fabrics	.442
851	Footwear	.455
852	Printed matter	.456
831	Travel goods and handbags	.457
632	Wood manufactures, nes	.470
861	Scientific instruments	.480
655	Special textile fabrics	.489
715, 716	Industrial machinery	.527
642	Articles made of paper	.555
612	Manufactures of leather	.557
656-01	Sacks	.582
666	Pottery	.583
651-other	Yarn of syntehtic and other fibres, nes	.606
821	Furniture	.607
631	Finished lumber, plywood	.610
651-04	Cotton yarn, bleached	.626
551	Essential oils and perfume	.633
512	Organic chemicals	.651
656-other	Other textile articles	.670
673	Jewelry	.680
641	Paper and paperboard	.682
657	Floor coverings	.700
629-01	Rubber tires and tubes	.767
521	Crude chemicals, dyestuffs	.778
591	Explosives and pyrotechnic products	.806
662, 663	Mineral manufactures, nes	.822
682-689	Non-ferrous metals	.839
651-03	Cotton yarn, unbleached	.890
665	Glassware	.914
561	Fertilisers, manufactured	.935

*Calculated according to the formula given in the note to Table 3, but n = 5, for the average is across countries rather than across commodity categories.

digit level of the NAUCA.¹² The result was a ratio of .616, higher than the ratio of .351 based on fifty-two categories, but still far short of the unity required to show the absence of 'intra-industry' trade. The phenomenon is a real one, and the pattern of specialisation is difficult to explain with existing trade data. Moreover, the simple correlation between the absolute export-import ratios and the weighted average ratios for the fifty-two commodity categories is .67: an industry that registers a large proportion of intra-industry trade continues to do so even when the trade data are disaggregated.¹³

In Table 4, the fifty-two industries under study are listed in order of ascending ratios of trade balances in 1968, i.e. in order of descending importance of intra-industry trade. *A priori*, one would expect the lowest ratios (greatest intra-industry trade) to be recorded by those industries containing the most differentiable output and the largest number of producers. To some extent, the calculations reported in Table 4 suggest that such is the case. The ratio for unbleached cotton yarn (.890) is, for example, higher than that for bleached cotton yarn (.626) presumably because the latter is a much more heterogeneous category of commodities including dyed as well as bleached yarn. Similarly, glassware and fertilisers show the highest ratios of the fifty-two industries because there is in reality only one plant in Central America for each of these industries. The ratios are, however, somewhat less than unity because countries possessing no production facilities registered exports that contain domestic value-added by virtue of mixing (fertilisers) and lithography (glassware).

Surprisingly, however, two of the lowest ratios of trade balances in 1968 were recorded in leather (NAUCA 611) and cement (NAUCA 661), two categories that contain products more homogeneous than differentiated. But in neither case is it possible to infer that intra-industry *specialisation* exists as a result of intra-industry *trade*. Leather is subject to internal price control and to periodic export quotas and export prohibitions in each of the five countries, and this government interference in trade accounts for the low ratio recorded in 1968. The intra-industry trade in cement is the result not of government interference but rather the monopolistic actions of private producers. As shown in Table 5, intra-industry trade in cement in 1968 was due almost entirely to exports from El Salvador to Guatemala and Honduras and to imports by El Salvador from these same two countries.¹⁴ Following the July 1969 conflict, there has been no trade between El Salvador and Honduras, but it is interesting to note that the volume of trade in cement between El Salvador and Guatemala diminished in 1970 and 1971.

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12. The full results of these calculations are available from the author on request.
 13. Grubel and Lloyd (1971) report for Australia a similar persistence of the relative strength of intra-industry trade as the degree of aggregation increases.
 14. Lime, which represents an insignificant proportion of trade compared to cement, is not included in the figures shown in Table 5.

Table 5
Central America: Intra-Regional Trade in Cement, 1968, 1970 and 1971.
 (value of shipments in thousands of U.S. dollars
 and unit values in dollars per metric ton)

From	To:	Guatemala	El Salvador	Honduras	Nicaragua	Costa Rica
<i>1968</i>						
Guatemala		---	367 (26)			
El Salvador		798 (26)	---	219 (29)		
Honduras			818 (34)	---		
Nicaragua					---	
Costa Rica						---
<i>1970</i>						
Guatemala		---	406 (27)			
El Salvador		298 (25)	---			
Honduras		10 (37)		---		
Nicaragua					---	43 (27)
Costa Rica						---
<i>1971</i>						
Guatemala		---	115 (24)			
El Salvador		136 (25)	---			
Honduras				---		
Nicaragua					---	49 (26)
Costa Rica						---

Note: Numbers in parentheses indicate the unit values of shipments whereas the other numbers indicate the cif value of shipments. Empty cells indicate the value of trade was less than ten thousand dollars.

Source: *Anuario Estadístico Centroamericano de Comercio Exterior 1968, 1970 and 1971.*

Table 6
Central America: Intra-Regional Trade in Leather Shoes, 1968.
 (thousands of U.S. dollars)

From	To:	Guatemala	El Salvador	Honduras	Nicaragua	Costa Rica
Guatemala		---	397	190	125	283
El Salvador		500	---	1216	295	559
Honduras		24	109	---	68	147
Nicaragua		20	87	104	---	150
Costa Rica		15	63	39	115	---

Source: *Anuario Estadístico Centroamericano de Comercio Exterior 1968.*

Table 7
Central America: Unit Values of Leather Shoes in Intra-Regional
Trade. (dollars per kilogram) 1968.

	Exports	Imports
Guatemala	4.72	2.95
El Salvador	3.38	4.59
Honduras	3.89	4.08
Nicaragua	5.80	2.89
Costa Rica	4.58	4.51
CACM	3.84	3.84

Source: *ibid.*

Presumably producers in each country are learning that price discrimination is not profitable when there is retaliation.

When specialisation within an industry is by quality or price lines, the calculation of unit values (value/weight ratios) may provide some evidence of the pattern of intra-industry specialisation. Leather shoes, an important component of the footwear industry, provides an illustration of such specialisation. As can be seen in Table 6, transport costs are relatively unimportant for these products, for each of the five countries register both imports from and exports to each of their partners in the CACM. The unit values reported in Table 7 suggest, however, that Guatemala and Nicaragua have specialised in the export of high quality and high-priced lines while importing the more popular lines of leather shoes. In El Salvador, in contrast, exports tend to be low-cost, mass-produced shoes while imports are the higher priced hand-made shoes. In both Costa Rica and Honduras unit values are quite similar for exports and imports, but shoes can be differentiated by style and brand image as well as quality.

Although in many cases intra-industry trade in Central America has promoted intra-industry specialisation, there is evidence that the process has not gone far enough to overcome the inefficiencies of operating in a small market. A recent SIECA report concludes, for example, that in Central American textile plants "there exists an excessive diversification in the types of textiles produced, and gains could be obtained from greater specialisation in production" (SIECA, 1972, p. 22.). The authors of the same report visited six textile plants that were experiencing difficulty competing in a regional market, and one of their observations was that

"All the firms are specialised primarily in the production of heavy textiles made of cotton and, to a lesser extent, cotton mixed with textile fibres. Within these categories, the excessive variety of styles and designs have not allowed the plants to achieve the degree of specialisation necessary for efficient production. One of the consequences of this diversification is that the firms have had to acquire a very diversified set of finishing equipment, with resulting excess investment and low rates of utilisation of that equipment. (SIECA, 1972, p. 63)

There is no mention of whether or not these six firms were exporting part of their production to other Central American countries but, if they were, it is evident that exports were not enough to enable them to achieve the economies that accompany intra-industry specialisation and a reduction in the variety of products produced at the plant level.

4. Conclusion: The Problem of 'Balanced Growth'

The main implication of this study is that the 'backwash' effects in the CACM have been much less serious than has previously been assumed. In each country the reciprocal exchange of manufactures for manufactures and of non-manufactures for non-manufactures dominates intra-regional trade. However, the structural changes in the manufacturing sector have tended to be in the form of intra-industry trade and specialisation, with no need to abandon existing production facilities. Intra-industry trade in the CACM is a real phenomenon rather than the product of statistical aggregation, for it persists even at the seven and nine-digit levels of the NAUCA.

For member countries of the CACM, the most important result of this study is that in 1968, the last year in which there was free trade among the five countries, Costa Rica recorded the highest degree of intra-industry trade in manufactures whereas Honduras recorded the lowest. This result is particularly significant since these two countries are the only ones for which there is evidence of trade creation following economic integration (Willmore, 1973). Moreover, Costa Rica has become a 'convert' to the integration programme while Honduras has re-established barriers to intra-regional trade. The explanation of this divergent behaviour seems to lie in the nature of adjustment to trade creation in each country and in the magnitude of the net gain accruing to each country as a result of trade liberalisation.

If manufacturing activity is a 'public good' in the sense that it provides utility apart from any private consumption of industrial output, then the benefits of entry into a customs union arise from exports rather than from imports of manufactures. Increased imports are a cost of participation either because they displace low-cost extra-regional imports or because they displace protected domestic production. Increased exports are beneficial because they reduce the cost of industrialisation in two ways. First, exports allow protected

Table 8
Central America: Intra-Regional Exports of Manufactured Goods as a Percentage of Gross Manufacturing Output (excluding food, beverages and tobacco), 1958, 1964 and 1968.

	1958	1964	1968
Guatemala	2	9	15
El Salvador	6	21	33
Honduras	5	9	14
Nicaragua	1	7	13
Costa Rica	2	13	16
CACM	3	16	19

Source: International Bank for Reconstruction and Development, *Report of the Industrial Finance Mission to Central America*, Washington, D.C., April 1971, Table 5.

plants to reduce their unit costs of production through conventional economies of scale, fuller utilisation of installed capacity and longer production runs. Secondly, exports allow a participating country to shift part of the excess costs of its production to partner countries. The exporter, in other words, receives an indirect subsidy in the form of relief from customs duties that would otherwise be payable.

The data reported in Table 8 suggest that by 1968 Honduras was exporting almost as large a proportion of its industrial production as was Costa Rica. In that year, 19 per cent of Central America's gross manufacturing output, excluding processed foods, beverages and tobacco, was traded among member countries of the CACM. Honduras exported 14 per cent of its gross industrial output and Costa Rica 16 per cent. Domestic value added as a proportion of gross output varies from country to country and from product to product, so the ratio of exports to gross output is an admittedly crude measure of dependence on the common market. Nevertheless, it appears that the potential gains from specialisation did not differ very much in the manufacturing sector of the two countries.¹⁵

15. In the agricultural sector and in agro-industry there was little opportunity for gains through intra-regional trade. In 1968, only five per cent of the gross output of processed food, beverages and tobacco was traded intra-regionally, and the proportion of agricultural output entering intra-regional trade was quite negligible.

Table 9
Central America: Distribution of Intra-Regional Exports of
Manufactured Goods (excluding food, beverages and tobacco).
1958-71.

	1958	1964	1968	1970	1971
Guatemala	23	31	31	35	35
El Salvador	49	37	35	29	33
Honduras	14	8	8	6	1
Nicaragua	4	7	10	13	13
Costa Rica	10	17	16	17	18
CACM	100	100	100	100	100

Sources: *ibid.*, Table 6 and *Anuario Estadístico Centroamericano de Comercio Exterior* 1970 and 1971.

Table 10
Central America: Distribution of Manufacturing Production,
1960-1971. (value-added at 1960 prices, including
food, beverages and tobacco).

	1960	1964	1968	1970	1971
Guatemala	36.0	33.5	33.0	33.8	33.0
El Salvador	22.4	23.5	23.4	21.6	21.2
Honduras	11.6	9.5	9.4	9.0	9.3
Nicaragua	11.7	15.3	15.6	16.7	17.3
Costa Rica	18.3	18.2	18.6	18.9	19.2
CACM	100.0	100.0	100.0	100.0	100.0

Source: SIECA, *El Desarrollo Integrado de Centroamerica en la Presente Decada* (Guatemala, October 1972), Table 11-15 and annex 1, Tables 1.7-1.12

Costa Rica's net gain has, however, exceeded that of Honduras because the cost of resource reallocation has been lower. In Costa Rica, to a much greater extent than in Honduras, adjustment has been in the form of intra-industry trade and specialisation. Only in Honduras is there evidence of substantial adjustment problems attributed to competition from intra-regional imports. (Robleda, 1972; Waiselfisz, 1971) Costa Rica's share in intra-

regional exports of manufactures is thus twice that of Honduras, and Costa Rica has been able to retain a fairly constant share of regional industrial production, while Honduras' share declined after entering the CACM' (See Tables 9 and 10).

Despite the problems of resource reallocation and lagging industrialisation, there is little doubt that net benefits, as perceived by government policy-makers, were positive in Honduras. During the last decade the rate of growth of industrial production exceeded the rate of growth of GDP in Honduras as it has in the other Central American countries. This pace of industrialisation would have been more costly without the reciprocal trading preferences of the CACM. Political leaders in Honduras thus admit privately, and sometimes even publicly, that participation in the CACM provided more gains than losses.¹⁶

A net benefit is, however, a necessary but not a sufficient condition for continued participation in a customs union. It is not sufficient that each member gains because the alternative to participation is not unilateral tariff policy but rather other forms of preferential trading arrangements. When members of the CACM failed to agree in 1970 on a restructured programme with special concessions for Honduras, Honduras withdrew from the Economic Council and ended preferential treatment for Central American imports. Within two years Honduras had signed bilateral treaties with Guatemala and Nicaragua and within three years with Costa Rica. These treaties allow Honduras to impose a specified tariff of up to 25 per cent on preferential imports, while Honduran producers enjoy unrestricted access to the market of the trading partner. By withdrawing from the regional free trade arrangement, Honduras has thus been able to alter the distribution of benefits in her favour.

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16. The Honduran Vice-Minister of Economics recently informed the Costa Rican press that his country's withdrawal from the CACM had resulted in more negative than positive effects in the national economy. *La Nación* (San Jose), 3 May 1973, p. 4.

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