THE BENEFITS OF ECONOMIC INTEGRATION:

THE CASE OF CENTRAL AMERICA

A. Geske Dijkstra

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ABSTRACT

The recent upsurge of the Central American Common Market in a context of overall trade liberalization and integration in the world market, raises the question whether there is a developmental reason for economic integration. This reason could be the promotion of manufacturing exports, in particular, capital and skill intensive manufacturing exports. The Central American countries Costa Rica and El Salvador pursued different policies vis-à-vis regional integration in the 1980s. These different policies proved to lead to different export markets, and they also led to different factor intensities of manufacturing exports.

INTRODUCTION

In recent years, Central American regional integration has revived. The value of intraregional trade in 1993 was about $1 billion—almost the 1980 record level (LAM, December 1993). In October 1993, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama signed a treaty that envisages the free movement of goods, capital and labour, coordination of economic policies, harmonisation of customs rules, and a single currency. In 1993, almost the whole Central American region became a customs union again, when a new common external tariff was introduced by most countries.

However, this new Central American integration scheme is not just a rebirth of the Central American Common Market (CACM) of the 1960s and 1970s (cf. Edwards 1993). The most important difference is that this new integration takes place in a climate of more openness of the individual countries' trade regimes. Especially from 1989/1990 onwards, all countries are on the way to trade liberalization, rapidly decreasing their import tariffs (Buttari 1992). They are GATT members or in the process of applying for membership. The new Common External Tariff (CET) is much lower than it used to be: tariffs range between 5 and 20 percent. The low external tariffs increase the possibilities for trade creation and reduce trade diversion. In addition, all countries are stimulating extraregional exports by specific policies. Both individual countries, and the Central American collective are seeking preferential trade arrangements with third countries, in particular with Mexico and the US.

Given the current emphasis on overall trade liberalization, why do these countries still have an interest in preferential trading arrangements? Is promoting a regional common market still relevant? I attempt to show in this paper that discriminatory policies may be beneficial for industrial development, in particular, because they lead to a higher skill intensity in manufacturing production.

In spite of the dominant creed among economists that free trade is best, the world seems to be dividing into a number of trading blocs. The efficiency of economic integration (free trade areas or customs unions) for industrialized countries is hardly ever questioned. The benefits of regional economic integration in Less Developed Countries (LDCs) are much more in doubt, especially with authors in the currently dominant, neoliberal tradition. Their argument seems to be based on old-fashioned trade theories. Since LDCs are less industrialized, they are assumed not to be able to reap the most important benefits from integration, such as increased competition, increasing returns to scale, international cooperation in R&D, etc.

According to the so-called new trade theory, comparative advantage is not given, but can be created by sensible government policies.[1] These policies may include discriminatory trade policies. I assume in this

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[1]Of course, there is nothing new about this new trade theory. The infant industry argument for protection is exactly the same. The only "new" is that the creation of comparative advantage is now applied to supposedly "advanced" countries, such as the US.

paper that regional integration of LDCs, by establishing some protection vis-à-vis third countries, helps to *create* competitive industries. These industries are probably not based on existing abundant endowments (raw materials or cheap labour). In the medium or long run they may enhance industrial development by creating backward and forward linkages, and allowing the production of intermediate and capital goods.

These arguments for South-South cooperation have been put forward by authors such as Amsden, Hughes, and Stewart (Amsden 1980, Van Beers 1982, Havrylyshyn and Wolf 1987). Stewart stresses the transfer of appropriate technology that is allowed by trade between countries at similar levels of development. Hughes emphasizes the economies of scale that permit higher X-efficiency and more innovation. Amsden explains in detail the *learning effects* of South-South trade (Amsden 1980, 1986). LDCs are more likely to be successful in export markets in which they have lower entry costs. These markets are more similar in business customs, laws, and culture. The quality standards in neighbouring markets may also be lower than in markets of industrialized countries. So there may be learning by doing in production, and also learning to export by doing (Webb and Fackler 1993). During this learning experience, companies will be able to improve quality so that they can enter Northern markets lateron.

Other arguments against economic integration in the South are based on studies that established the factor intensity of South-South trade as opposed to South-North trade. Krueger (1978) found that the labour intensity (direct requirements of labour, in man years, per unit of value added) of manufactured exports from Chile, Kenya, Thailand and Uruguay was higher in exports to the North, than in exports to the South. Havrylyshyn and Wolf (1987) reviewed many empirical studies. They report that most studies found a higher capital intensity in South-South exports, as well as a higher human capital intensity. Amsden (1980) did not find a higher capital intensity in South-South exports, but she did find a higher skill intensity.

There can be two interpretations for the findings that in most studies, higher capital and skill intensities were found for South-South exports. The higher intensities may indicate the learning effects involved in South-South trade, as Amsden maintains. As argued before, they may have positive dynamic effects and may lead to higher growth rates in the future. On the other hand, both Krueger and Havrylyshyn and Wolf, look upon the higher capital and skill intensity of South-South exports as a deviation from the 'natural' comparative advantage of LDCs. In their view, a high share of South-South exports is the result of trade distortions. The same trade distortions may lead to a lower overall growth rate of manufacturing exports. Havrylyshyn and Wolf (1987) report, for example, that the most dynamic LDC exporters destined their manufactured exports mainly to the North. Countries that pursued more inward-looking policies, such as the Latin American countries, proved to trade more to Southern countries. Krueger, and Havrylyshyn and Wolf seem to assume a positive relation between employment growth or export growth, on the one hand, and development on the other. This does not seem to be justified. Kaplinsky (1993) shows, for example, that increased exports and increased employment may be accompanied by falling terms of trade and falling real per capita GDP. So, the higher labour intensity and higher export growth associated with South-North exports are not necessarily positive from a development point of view.

I think that the interpretation that higher capital and skill intensities are the result of trade distortions does not contradict the assumption that learning effects are involved. The two supplement each other. It can very well be that discriminatory trading policies lead to higher relative shares of South-South trade, *and* to higher capital and skill intensities of this manufacturing trade, and probably also of manufacturing trade in general. In this paper, I will not test the dynamic benefits of South-South trade as such.[2] I assume that

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[2]To my knowledge, there are only two studies that attempted to do so. Van Beers (1992) attempts to establish the effects of South-South exports versus South-North exports on economic growth (as a proxy for total factor productivity growth). He estimated a growth model with pooled data for 11 Asian countries for 12 years. The results do not confirm his hypothesis, but this can be due to the fact that he does not use a truly dynamic model. Webb and Fackler (1993) used Granger causality tests to investigate whether Costa

these higher intensities are beneficial for promoting manufacturing competitiveness in the medium and long term. Instead, I explore whether discriminatory trading policies influence the growth of manufacturing exports and the share of intraregional exports in total manufacturing exports, and whether they influence the factor intensities of intraregional manufacturing exports and the factor intensities of total manufacturing exports. The paper focusses on a comparison of the Central American countries Costa Rica and El Salvador in the 1980s.

Until now, studies on the comparative advantage of Central American manufacturing are scarce. Buitelaar and Fuentes (1991) analyzed the sectors with the highest export growth between 1978 and 1988. Using US data on factor intensities, they concluded that these high-growth sectors are based mainly on raw materials and labour. They found that assembly exports based on cheap labour are growing. But, in particular for Costa Rica, some branches of which exports are rapidly growing also seem to succeed in increasing labour productivity (Dijkstra and Van der Wijk 1995). It could very well be that stimulating intraregional exports of manufactures helps to develop higher technological levels in production. Moderate import substitution policies at a regional level have also been advocated for more or less the same reasons by Irvin and Holland (1989) and Bulmer-Thomas (1989, 1993), among others.

In the next section, I show that Costa Rica and El Salvador pursued different policies towards intraregional exports in the 1980s. El Salvador maintained import substitution policies for most of the decade, while Costa Rica made an earlier shift toward promotion of extraregional exports. Section 4 presents data on the share of intraregional exports in total manufacturing exports from these countries, and on the trend in total manufacturing exports. Then I explore whether intra-CACM trade from these countries has higher capital and skill intensities than trade to the rest of the world, and I present possible reasons why these Central American findings deviate from results obtained in many other studies (sections 5). Finally, I show that different trading policies do seem to lead to different trends in factor intensities of total manufacturing exports from these countries. To establish capital and skill intensities of manufacturing exports, a factor content method is used (see Van Beers 1991). This methodology and data sources are described in section 3. In section 6 follows a conclusion.

TRADE POLICIES OF COSTA RICA AND EL SALVADOR

The trade policies of Costa Rica and El Salvador can be assumed to be influenced by the given endowments of the countries, by their economic and political environment, and by the arrangements in the context of the Central American Common Market. Table 1 presents some data on the availability of labour and human capital in these two countries. Labour availability proves to be higher in El Salvador. Costa Rica's population seems to be more highly skilled, although the data are not very comparable because of the different age groups and the different years.

Rican exports to CACM countries were a learning ground for exports to the North. Over the period 1955-1980, CACM-induced learning was established for non-electric machinery and for leather, and to a lesser extent for intermediate manufactures. For other sectors, such as wood and furniture, and textiles and clothing, the CACM reoriented exports away from Northern countries. For many other sectors there proved to be no evidence of dynamic benefits of CACM exports.

Table 1. Some background data on Costa Rica and El Salvador

	Costa Rica	*El Salvador*
Total population	3.2 mln	5.4 mln
Population 25+*/10+**	657,543	3,132,400
No schooling (%)	16.1	30.2
First level, incomplete	49.1	60.7
First level, complete	17.8	
Second level, S1	6.3	6.9
Second level, S2	4.9	
Post-secundary	5.8	2.3

*Costa Rica; **El Salvador; for Costa Rica, the data refer to 1973, for El Salvador to 1980.
Sources: IDB, *Economic and Social Progress in Latin America*, 1993; UNESCO, *Statistical Yearbook 1992*.

Both countries experienced high GDP growth rates in the 1960s and 1970s, and high growth rates of the manufacturing sector (Table 2). Manufacturing increased its share in GDP from 14.5% in 1960 to 17.8% in 1980 in El Salvador (Salazar 1993), and from 17.1% to 18.6% in 1979 for Costa Rica (Weeks 1985).

Table 2. Average annual growth rates, in %

	Costa Rica		*El Salvador*	
	1960-1970	1970-1979	1960-1970	1970-1979
GDP	6.2	6.4	5.5	6.4
Manufacturing	8.6	7.9	6.7	6.0*

Source: J. Weeks, *The Economies of Central America*. New York: Holmes and Meier, 1985.
*To 1978.

The Central American Common Market (CACM), established in 1960 and an effective customs union since 1966, was an important factor in the high manufacturing growth rates of the 1960s and 1970s. The effective protection for final consumer goods was rather high. This was the result of high tariffs on final products and low tariffs on equipment and intermediate goods. Central American countries pursued so-called first-phase import substitution policies. Historically, the Central American market was somewhat more important for manufacturing industry in El Salvador than in Costa Rica.[3]

However, the regional import substitution strategy was not the only factor in stimulating industrial growth. The rapid growth of traditional exports was probably even more important: it allowed large imports of machinery, capital equipment and intermediate goods, and brought about a general increase of demand in the region.

[3]Between 1969 and 1979, for example, the share of manufacturing exports classified according to ISTC, categories 5-8 minus 68, going to CACM from El Salvador was 92%, and from Costa Rica 78% (UN Commodity Trade Statistics, several years).

Around 1980, these favourable trends came to an end. In the context of the world recession, the terms of trade for the region declined and interest rates on external debts soured. In Nicaragua, El Salvador and Guatemala civil wars began, which severely reduced domestic supply, and also reduced demand for regional products. Capital flight mounted, and all countries began to experience balance of payments problems.

The CACM was under pressure. Firstly, many of its agreements were no longer in force. Each country sought to adjust at the others' expense, restricting trade from CACM partners and neglecting payment obligations to them (Irvin and Holland 1990, 5). Secondly, Central American countries became very much dependent on the inflow of official capital. The institutions (IMF, World Bank, Inter American Development Bank) and countries (US) that provided most of this capital, had no interest in reviving the CACM.[4] They considered intraregional trade an inefficient deviation from the market, related with a high-cost industrialization process. Instead, these external forces promoted extraregional exports, in particular to the US market. The Reagan administration announced its 'Caribbean Basin Initiative' (CBI) in 1982. From 1983 onwards, the CBI granted special access to the US market for nontraditional export products[5] from all Central American and Caribbean countries except Cuba and Nicaragua. Both Costa Rica and El Salvador could benefit from this scheme, which included manufactures.

Within the CACM, intraregional debts mounted. As a consequence, the Central American payments system (Cámara de Compensación Centroamericana, CCC) collapsed, which made trade ever more difficult. Barter trade increased. Around the middle of the decade, new talks began on regional cooperation, and the five countries of the former CACM established a new Common External Tariff (CET) in 1986. These tariffs were still rather high. In 1993 the CET was set at levels between 5% (for capital goods and intermediate goods) and 20% (final goods). For some products, such as textiles and clothing, exemptions were granted: In some cases, higher tariffs were allowed permanently, in others, the date of entrance of the new tariff was postponed to 1994 or 1995. Exemptions with respect to the time schedule were also allowed to Panama and Nicaragua.

Costa Rica[6]

Costa Rica reacted to the balance of payments and debt crisis of the early 1980s with a devaluation in 1981. After that, some erosion of the real value occurred due to inflation. As of 1985 the colon was managed on a crawling peg basis. As a result, the real exchange rate was maintained more or less at the low level of the mid-1970s (Gindling and Berry 1991). In 1982, a restrictive macro-economic policy followed. The industrial sector was hit particularly hard by increased import costs, by the decline in regional demand, by a fall in domestic demand, and by the fall in real wages. Almost forced by circumstances, the industrial sector had to seek extraregional markets. The fact that there was already much disenchantment with the CACM in Costa Rica (Bulmer-Thomas 1988) made this probably easier.

The government revived a drawback scheme which already existed since 1972. This drawback, or temporary admission scheme, implies that imports of raw materials and intermediate goods are exempted from import duties if destined for production for exports. Until 1982, only thirty-two enterprises had qualified for the scheme. When it was re-established in 1983, only exporters of nontraditional products to outside the CACM qualified. Exporters to the 'rest of the world' could also apply for an 'Export Tax

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[4]In the case of Nicaragua, official capital came from other sources; mainly Latin American and European countries.

[5]Nontraditional exports exclude the traditional export products coffee, sugar, cotton, and meat.

[6]See for a more extensive treatment Dijkstra and Van der Wijk (1995).

Certificate' (Certificado de Abono Tributario, CAT). This was a tax credit of 15% of the FOB value of nontraditional exports (for exports to Europe even 20%). Firms exporting to the rest of the world could sign 'export contracts' with the government, which could include, in addition to the CATs and duty free imports, preferential bank credits, exemptions from direct taxes, and special port charges. These measures were all meant as compensation for the anti-export bias still existing in the overall trade policy. The measures were rather popular among firm managers, and the CATs became a problem for the government budget; they were abolished in 1992 (although current contracts remain vigent).

In addition, two EPFZs were revived, but the sites were not very attractive and many firms preferred the temporary amission scheme above location in the Zones. In 1990, a new Law permitted private industrial free zones. By 1992, there were 109 enterprises in the EPFZs, providing bout 15,000 jobs (IDB 1992). With the new Common External Tariff of 1986, tariffs were reduced and import quotas were abolished. However, effective protection for many branches was still high. Costa Rica decided to unilaterally reduce tariffs from 1987 onwards. As a result, the average effective protection for 50 ISIC groups was to fall from 133% in 1987 to 50% in 1993.[7]

El Salvador

El Salvador's economy was in the 1980s dominated by the civil war. Many investors brought their capital abroad, in large parts of the countryside production was severely hampered, and more than one million Salvadoreans migrated. In an attempt to reduce support for the guerrilla movement, the government introduced its three 'reforms' of 1980: an agrarian reform, nationalization of the banking sector, and of foreign trade (coffee and sugar exports). This increased government intervention in the economy was accompanied by a continuation of import substitution policies of the 1960s and 1970s. During most of the 1980s, El Salvador maintained a dual exchange rate system, an official and a parallel rate, which were both overvalued: due to a large inflow of foreign (US) aid and an increasing amount of private remittances from Salvadoreans abroad.

Although promotion of exports to outside the Central American region officially had begun in the 1970s, mainly by the opening of the EPFZ San Bartolo, employment in this Zone decreased dramatically in the early 1980s because of the civil war (Dijkstra and Alemán 1995). In 1985, a temporary attempt was made to stimulate exports of nontraditional exports by allowing these producers to change their dollars at a more favourable exchange rate (Dijkstra 1993). As of 1986, nontraditional exports to outside the CACM were promoted by a new Export Promotion Law. Firms exporting 100% of their output were granted exemptions from import duties, and from direct taxes (the latter for a period of ten years). Companies exporting at least 25% of output to outside the CACM region, were exempted from import duties for imports for exportable production only. The law also permitted the establishment of private EPFZs. A Tax Credit Certificate (Certificado de Descuento Tributario, CDT) scheme which officially already existed from 1974 onwards but had never been applied, was also revived. The CDT would only be granted to firms not benefiting from any other scheme, and consisted of 30%, at most, of the FOB value of exports. However, obtaining the CDT was highly dependent on the discretion of government officials. In practice the number of CDTs granted was limited, and the drawback scheme was more important (Arriagada 1992).

With the coming to power of the ARENA government in 1989, economic policy changed dramatically. The nationalizations of exports and of the banking sector were reversed, structural adjustment policies began, and foreign trade was liberalized. The exchange rate was freed, which reduced but did not end the overvaluation of the currency. Tariffs were reduced across the board. In 1990, a new Export Reactivation

[7]According to a study by A. Ulate of 1989, cited in IDB (1992).

Law was approved. Exporters of nontraditional products to outside the CACM came to receive an 8% CDT. If they exported 100% of their output to the rest of the world, they also were exempted from property tax. Firms exporting traditional products that underwent a transformation in which at least 30% of the total value is local value added, were also entitled to a CDT of 8% of FOB value.

Together with the Export Reactivation Law, a Law of Free Zones and Tax Haven Regimes was introduced. According to this Law, enterprises established in an EPFZ or enterprises acknowledged as 'Tax haven' (under the condition that they export 100% of output to the rest of the world), are completely exempted from import duties, and also from taxes on income and property—the latter for a period of 10 years. With this law, practically the whole country was converted into a potential Free Zone.

Conclusion

Table 3 summarizes the different trade and export promotion policies of Costa Rica and El Salvador. In general, El Salvador showed a later switch to a more open trade regime. During the whole of the 1980s, import substitution policies were dominant. It was not until 1985 that some compensatory measures were taken to mitigate the anti-export bias. This means that industrial producers for the domestic and regional markets were stimulated more than exporters to extraregional markets. Although Costa Rica's overall anti-export bias in the trade regime was maintained until 1987 and then gradually lifted, the country established a competitive exchange rate in 1981 and took measures to compensate for the anti-trade bias already in 1983. Relatively, during the 1980s extra-regional exports were stimulated more in Costa Rica than in El Salvador. The shift itself from an import substitution regime to a more neutral regime was carried out much more rapidly in El Salvador than in Costa Rica.

Table 3. Starting years for factors and policies influencing trade, Costa Rica and El Salvador 1980-1993.

Factor / policy	Costa Rica	El Salvador
Decline demand from CACM	1980	1980
Competitive exchange rate	1981, 1985	(1990-)*
CBI	1983	1983
Tariff reductions	1987-1993	1990-1993
Draw back schemes	1983	1986
CAT / CDT	1983	(1986) 1990
Revival EPFZ	1983	1986
Tax havens	-	1990

Source: See text.
*During 1985 a more competitive exchange rate was briefly applied to nontraditional exports (multiple exchange rate system).
Note: If a year is put in brackets, it means that the policy was not carried out 100%.

DATA SOURCES AND METHODOLOGY

I used trade data on Costa Rica and El Salvador from *UN Commodity Trade Statistics*. The years available were 1980-1989 for both countries, with the exceptions of 1983 for Costa Rica, and 1983 and 1985 for El Salvador. In the earlier years (1980-1985) these trade data were classified according to SITC-1, the later years according to SITC-2. The conversion from SITC-2 to SITC-1 was made on the basis of the descriptions of the different categories.

Many other studies that attempt to establish capital and skill intensity of manufacturing exports, use classifications of factor intensities based on production data from the US (e.g. Amsden 1980, Buitelaar and Fuentes 1991). Other studies use production data from India (Havrylyshyn and Wolf 1987), which is probably a better approximation for Central American countries than US data. However, factor reversals are always possible. For that reason, I measured actual capital and skill intensities in manufacturing in Costa Rica and El Salvador. So, it was necessary to convert trade statistics (SITC-1) into production statistics (ISIC-2). I applied the conversion tabel also used by OECD and UNIDO (cf. Verspagen 1992, 194).

For production statistics the *UNIDO Industrial Statistics* database was used, which has data on employment, wages and production (value added) at a three-digit level. For establishing the capital and skill intensities of manufacturing sector i, I applied the factor content method as described in Van Beers (1991). The factor content was calculated for each sector and for each year (as of 1980) for which production data were available: for 1984-1990 for Costa Rica, and for 1980-1985 and 1991 for El Salvador. The number of sectors (3-digit level) was 28 for both countries. From the converted trade data 29 sectors were obtained, but in production data 311 was combined with 312.

The formulas for calculating the factor content in sector i are as follows (Van Beers 1991, 83):

Physical capital in sector i:

$$\frac{\frac{VA_i}{L_i} - \frac{W_i}{L_i}}{\frac{Y_i}{L_i}} \qquad (1)$$

Human capital in sector i:

$$\frac{\frac{W_i}{L_i} - \frac{W^*}{L}}{\frac{Y_i}{L_i}} \qquad (2)$$

Unskilled labour in sector i:

$$\frac{\frac{W^*}{L}}{\frac{Y_i}{L_i}} \qquad (3)$$

with:

$\frac{VA_i}{L_i}$ = value added per employee in sector i

$\frac{W_i}{L_i}$ = wages per employee in sector i

$\frac{W^*}{L}$ = wages of unskilled labour

The factor ratios are all divided by the share of sector i's value added in total output, to standardize the different ratios. This is necessary in order to calculate country ratios by summing the sector ratios. The wages of unskilled labour (W* / L) were estimated by taking the wage per employee of the sector where it was lowest in the involved year.

To calculate the physical and human capital ratios at the country level for each year, the following formula was used:

$$\left(\frac{C}{L}\right)_j = \frac{\sum_i (B_i \; E_i^j)}{\sum_i (D_i \; E_i^j)} \qquad (4)$$

with:

$\left(\frac{C}{L}\right)_j$ = physical or human capital content of exports to j per unit of unskilled labour content of exports to j

B_i = physical or human capital content of sector i as defined in (1) and (2) above

D_i = unskilled labour content of sector i, as defined in (3) above

E_i^j = manufactured exports of sector i to destination j

j: = CACM (c) or Rest of the world (r)

If $(C/L)_c > (C/L)_r$, it means that the capital, respectively skill intensity of exports to CACM is higher than the capital, resp. skill intensity of exports to the rest of the world. As exports (E_i^j) the actual exports to CACM or to the rest of the world were taken. A sector could be included in both destinations, so in $(C/L)_c$ and $(C/L)_r$. The factor intensities of that sector were weighted, so to speak, with the quantity of exports

going to a certain destination.[8]

Since the years for which trade data are available do not correspond exactly with the years for which production data are available from which the factor contents were deduced, the following was done. For Costa Rica, I made the calculations for 1984-1989 by matching year by year, and I used average factor intensities for trade data of 1980-1982. The latter data are not very reliable however, since there was a marked trend in factor intensities in Costa Rica during the 1980s. For El Salvador, production data for 1980, 1981, 1982, and 1984 were 'matched' with trade data of the same year. Trade data for 1986-1989 were matched with average factor intensities deduced from the years 1985 and 1991, for which production data are available. For El Salvador, there was much less variation in factor intensities over the years, so these results are probably more reliable.

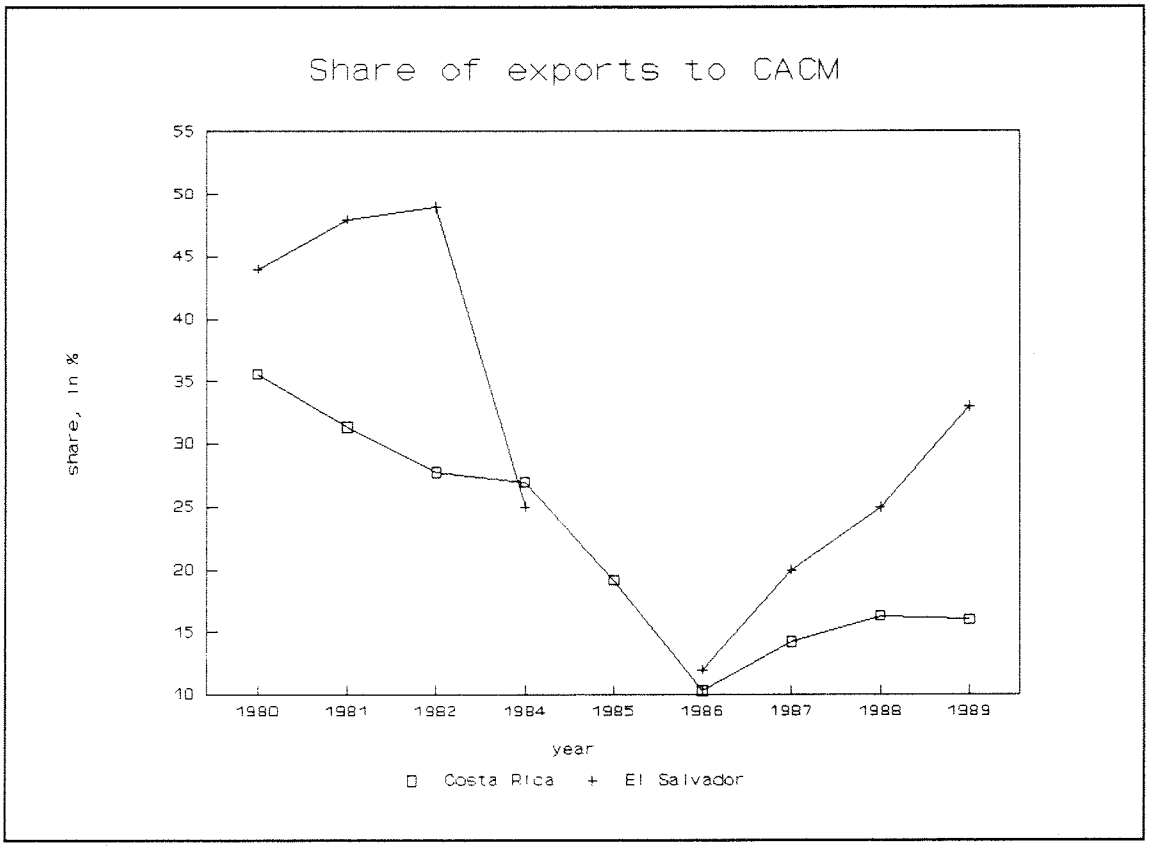

Figure 1.

[8]Van Beers (1991) used another decision rule: if more than 50% of a sector's exports was destined to South (in this case: CACM), respectively to North (in this case: rest of the world), then the whole sector was classified as 'South' or 'North'. For the small number of years we have here this is not only an arbitrary rule, but could also easily lead to a bias since many export data would not be used.

EXPORT MARKETS

Appendix tables 1 and 2 show the shares of manufactured exports going to the CACM for the years 1980-1989, by ISIC branch (in so far as data were available). Due to the conversion of trade data into production data, this gives a much better approximation of 'manufacturing exports' than if it is only based on SITC categories. Figure 1 on page 10 is based on these tables. It compares the shares of total manufactured exports going to the CACM, for Costa Rica and El Salvador. Figure 2 presents the trends in absolute quantity of total manufactured exports and quantity of exports to CACM for both countries.

Several observations can be made:

1. Both countries experienced a drop in manufacturing exports between 1980 and 1982; in the rest of the decade, the recovery was much stronger in Costa Rica than in El Salvador (Figure 2). At least in part, this unequal recovery must be due to different trade policies.
2. The absolute quantity of exports to CACM countries is remarkably similar for both countries (Figure 2). In relative terms, the CACM share is much more important for El Salvador than for Costa Rica for most years (Figure 1).
3. Both countries show a sharp drop in the CACM share in the mid-1980s, with a low summit in 1986. This year also shows an absolute decline in these exports (Figure 2). This can be explained by the increasing restrictions to regional trade posed by each Central American country, the general lack of foreign exchange, and the collapse in regional payments arrangements.

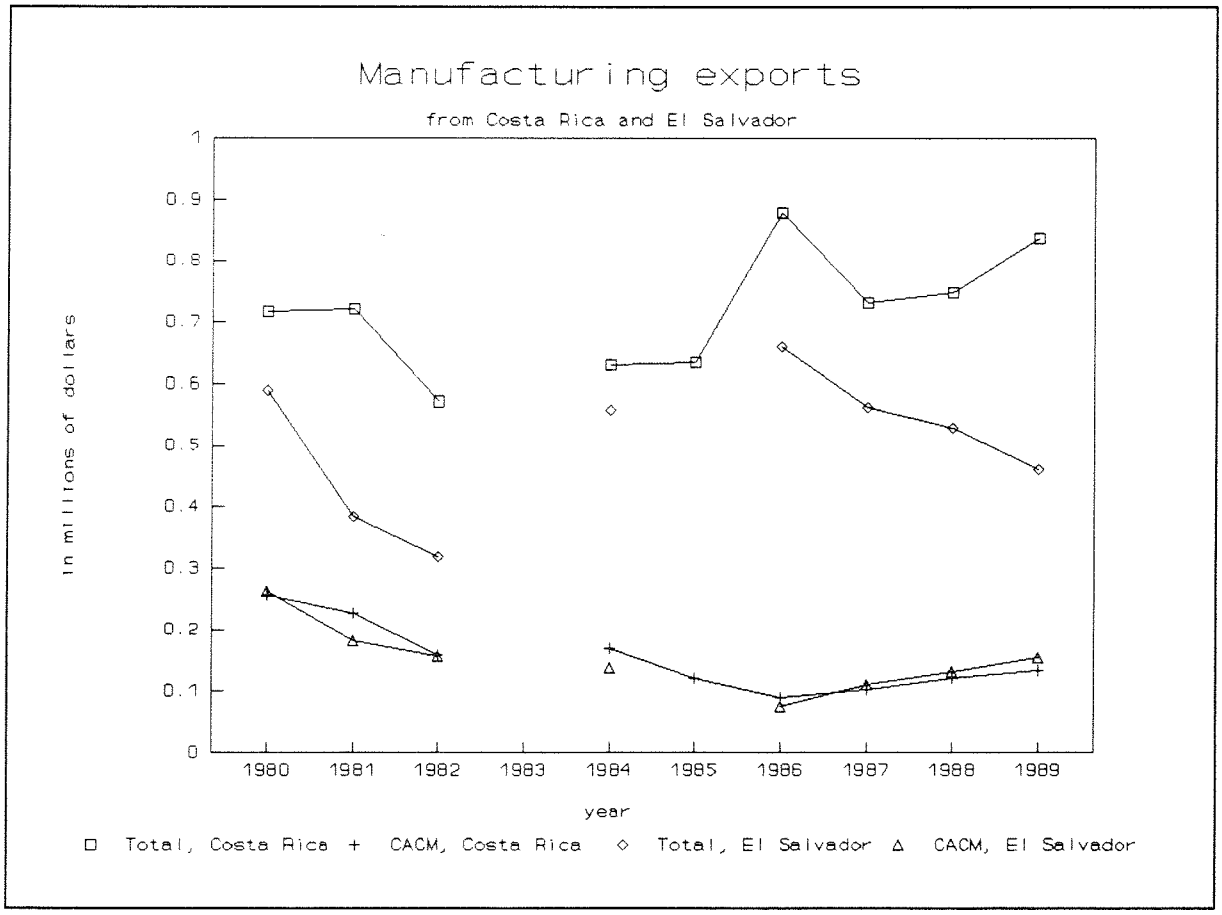

Figure 2

4. After this low summit, the CACM share recovers for both countries, but much more for El Salvador (Figure 1). Looking at Figure 2, however, this is mainly due to a declining trend of overall manufacturing exports for El Salvador, while total Costa Rican exports perform much better.

For Costa Rica, some substitution of markets seems to have come about. Manuactruing exports increased during the decade, and the share going to the CACM decreased in absolute and relative terms. For El Salvador, the CACM share relative to the total remains much more important.

Given the geographical 'border position' of Costa Rica in the CACM, and the relatively high level of trade to other Latin American countries, I wondered whether the market change implied, in fact, a substitution of CACM markets in favour of markets in other developing countries (South-South substitution). Figure 3, based on Appendix table 3, shows that this is not the case. The share of manufactured exports going to other countries in the South also declined in the 1980s, and only in the years of the complete breakdown of CACM trade, some substitution seems to have occurred. The conclusion must be that Costa Rican manufacturing substituted regional markets for markets in developed countries.

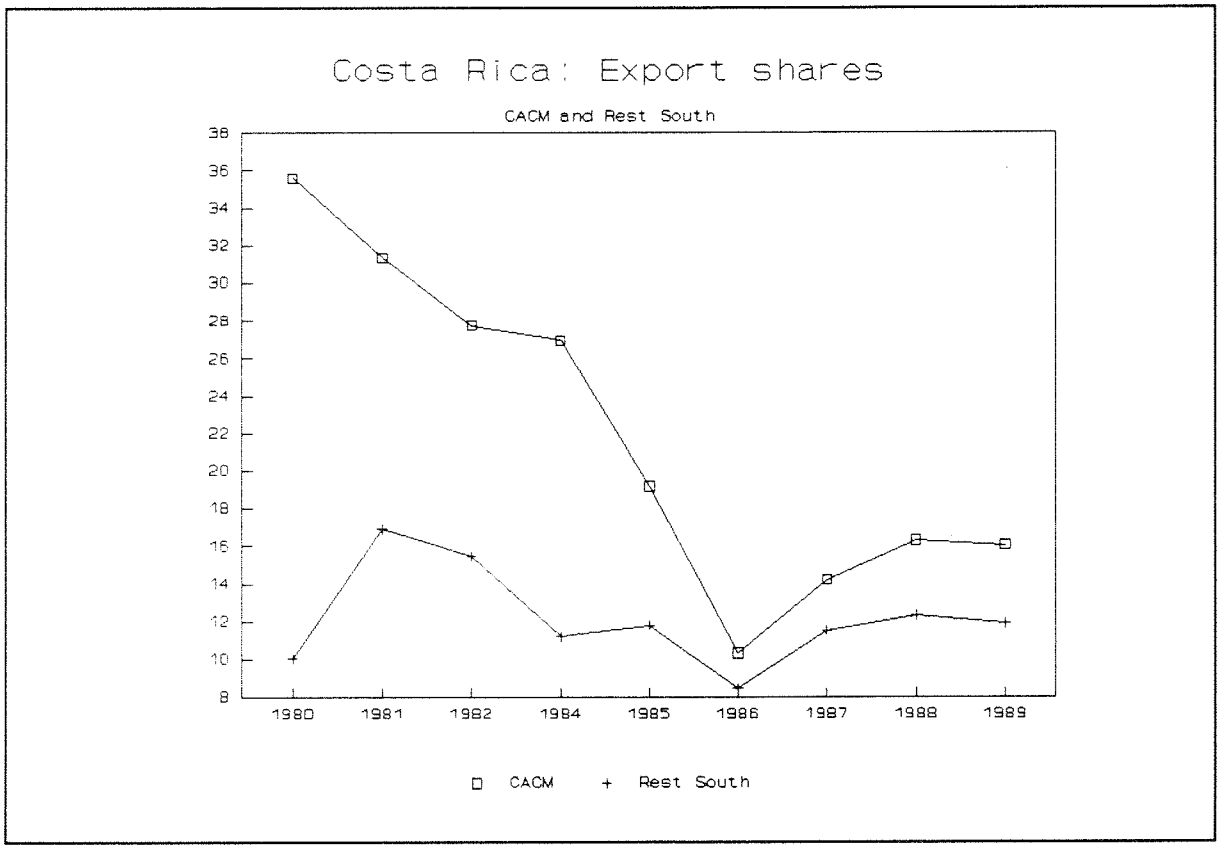

Figure 3

FACTOR INTENSITIES

Appendix tables 4 and 5 show the physical capital intensity and the human capital intensity, respectively, by industrial branch in Costa Rica. Overall, intra-CACM exports are more capital and skill intensive than extraregional exports only for the latest years. In 1987-1989, the physical capital ratio exceeds unity (table 4). The human capital ratio is even lower than the physical capital ratio for all years and only exceeds unity in 1988 and 1989. In most years, Costa Rica seems to have exported relatively skill intensive products to extraregional markets.[9]

Table 4. Costa Rica: Physical content ratios and human capital content ratios for exports to CACM compared to exports to rest of the world

	1980	1981	1982	1984	1985	1986	1987	1988	1989
Physical*	0.60	0.64	0.70	0.82	0.81	0.84	1.10	1.27	1.54
Human**	0.47	0.52	0.57	0.63	0.70	0.75	0.88	1.06	1.39

Source: See text.
*$(K/L)_c$ / $(K/L)_r$
**$(H/L)_c$ / $(H/L)_r$

However, other studies compare South-South exports with South-North exports. Since manufacturing exports to other developing countries cannot be neglected for Costa Rica, I also calculated factor intensities for exports to all developing countries in comparison with exports to developed countries. Table 5 shows that the figures for South exports are a bit higher, but still only exceed unity for the three latest years.

Table 5. Costa Rica: Physical content ratios and human capital content ratios for exports to the South (including CACM) compared to exports to the North

	1980	1981	1982	1984	1985	1986	1987	1988	1989
Physical*	0.61	0.71	0.76	0.89	0.90	0.96	1.35	1.41	1.48
Human**	0.45	0.52	0.59	0.67	0.76	0.82	1.05	1.16	1.25

Source: See text.
*$(K/L)_s$ / $(K/L)_n$
**$(H/L)_s$ / $(H/L)_n$

For El Salvador, physical and human capital intensity by branch are given in appendix tables 6 and 7. The results on the total of industrial exports from El Salvador show an opposite trend. Only for the first two years the figures exceed unity (table 6). This means that also El Salvador proved to export more capital and

[9]However, the figures for 1980-1982 are not very reliable (see above, section on methodology).

skill intensive products to extraregional markets than to intraregional markets in most years. So the results for both countries seem to be in contradiction with the results from other studies on other countries. A possible explanation could be the fact that multinational corporations play a substantive role in manufacturing exports from these countries. Exports from subsidiaries of multinational corporations may be mainly directed to other subsidiaries in extraregional markets. At the same time, skill and capital intensities in these subsidiaries may be higher than in other firms. In other countries, the for which factor intensity studies have been done, the contribution of multinational corporations in manufacturing exports is probably smaller.

Table 6. El Salvador: Physical content ratios and human capital content ratios for exports to CACM compared to exports to rest of the world

	1980	1981	1982	1984	1986	1987	1988	1989
Physical*	1.14	1.09	0.83	0.76	0.90	0.85	0.83	0.88
Human**	1.21	1.02	0.84	0.87	0.88	0.88	0.85	0.89

Source: See text.
*$(K/L)_c$ / $(K/L)_r$
**$(H/L)_c$ / $(H/L)_r$

When we compare Costa Rica and El Salvador, it seems that the more open trade regime of Costa Rica in the second half of the decade, enhanced the expected difference in factor intensities between intraregional exports and extraregional exports. Probably, the new exports to industrialized countries had lower skill and capital intensities than the 'old' exports. For El Salvador, it can be stated that the maintenance of discriminatory trading policies prevented a rapid increase of manufacturing exports from coming about. Extraregional exports came to exhibit slightly higher capital and skill intensities than intraregional exports. In view of the different trends for Costa Rica and El Salvador, it seems that the maintenance of discriminatory policies did not enhance higher capital and skill intensities of intra-CACM manufacturing trade.

The last question is whether the different trade policies of Costa Rica and El Salvador led to different factor intensities of total manufacturing exports in this period. Although the factor content method has been applied for both countries in the same way, the original UNIDO data on value added, wages and employment have probably been compiled in different ways for the different countries. So, the absolute figures cannot be compared. What can be compared, however, is the trend in factor intensities for total manufacturing exports. Table 7 shows that both capital intensity and human capital intensity of manufacturing exports declined between 1980 and 1989 for Costa Rica. For El Salvador the opposite trend applies: physical capital intensity more than tripled, and human capital intensity more than doubled in this period.

Table 7. Physical and human capital intensity of total exports, Costa Rica and El Salvador

	1980	1981	1982	1984	1985	1986	1987	1988	1989
Costa Rica:									
Physical*	5.4	5.8	5.9	6.1	6.3	6.4	4.6	3.8	3.2
Human**	2.6	2.8	2.9	2.7	2.9	3.2	2.5	2.0	1.7
El Salvador:									
Physical*	2.6	3.6	3.8	7.6		9.9	9.1	9.1	8.6
Human**	0.5	0.9	0.5	1.2		1.4	1.4	1.4	1.3

Source: See text.
*(K/L) for total exports
**(H/L) for total exports

We can conclude that the more open trade regime in Costa Rica promoted manufacturing exports, but that the capital and skill intensities of these exports declined, especially as of 1987. In El Salvador, manufacturing exports stagnated, especially after 1986, but the capital and skill intensities of manufacturing exports increased during the decade, with the largest jumps in 1984.

CONCLUSION

The starting point for this paper was that South-South trade could be beneficial for development, in particular, manufacturing development. LDCs were expected to obtain learning effects by exporting manufactures to other developing countries. This would increase their competitiveness, and after some time, they would be able to export also to developed countries. For this reason, policies giving additional incentives to South-South exports (preferential trade arrangements) could be beneficial for manufacturing development. These policies would lead to relatively more exports to the favoured partners. They would also lead to higher capital and skill intensities of manufactured exports.

In Central America, El Salvador maintained discriminatory trading policies in the 1980s to a larger extent, while Costa Rica shifted earlier (around 1983) to a more open trade regime. In line with expectations, El Salvador proved to have higher CACM shares in manufacturing exports. However, the absolute quantity of manufacturing exports to the CACM was remarkably similar in both countries. In addition, both countries experienced a sharp fall in their CACM share in the middle of the decade. This could be explained by common factors, such as the collapse of the Central American payments system and the restrictions to intraregional trade posed by all countries. The main difference between the two countries was that the more open trade regime probably favoured a more rapid increase in total manufacturing exports from Costa Rica. The relative importance of the CACM declined for that country, and some market shift from CACM to industrialized countries could be established.

Contrary to what has been found in other studies for other countries, manufacturing exports to the CACM were not always more capital and skill intensive than extraregional exports. For Costa Rica, they were more capital intensive for the three last years of the decade only, and more skill intensive only for the two last years. For El Salvador intraregional manufacturing exports were more capital and skill intensive only for the two earliest years. These 'anomalies' can perhaps be explained by the substantive role multinationals play in manufacturing exports from these countries.

Looking at the trend in factor intensities of total manufacturing exports, the expectation could be confirmed that the country with the more open trade regime (Costa Rica) showed a drop in capital and skill

intensities. El Salvador saw its capital and skill intensities increase significantly during the decade. It seems, though, that discriminatory trading policies in favour of South-South trade do influence the destination of trade, and influence the factor intensities of trade. A country with a trade regime which is more open in general but which is less directed towards regional integration, may have higher manufacturing exports, but these exports are likely to have lower capital and skill intensities. This may affect development in the medium or long term. So there seems to be an argument for at least not discarding manufacturing exports to neighbouring countries.

In a more modern context, regional economic integration deals with much more than preferential trade policies. It includes, for example, cooperation in the development of infrastructure, coordination of policies with respect to taxes, financial regulation, etc., harmonization of investment rules, and joint negotiations on trade, aid and investment with third parties (Robson 1993, Hamilton and Thompson 1994). If these aspects of regional integration are taken into account, the benefits for developing countries may be even greater.

References

Amsden, A. H. (1980) 'The industry characteristics of intra-Third World trade in manufactures'. *Economic Development and Cultural Change*, Vol. 29, pp. 1-19.

Amsden, A. H. (1986) 'The direction of trade—past and present—and the "learning effects" of exports to different directions'. *Journal of Development Economics*, Vol. 23, pp. 249-274.

Arriagada Stuven, P. (ed.) (1992) *Marco legal e institucional para el desarrollo de las exportaciones no-tradicionales: El caso de Costa Rica, el caso de El Salvador, el caso de la República Dominicana* (San José/San Salvador: CINDE/FUSADES).

Beers, C. van (1991) *Exports of developing countries: Differences between South-South and South-North trade and their implications for economic development* (Dissertation, Leiden University).

Beers, C. van (1992) 'The importance of developing countries' export destinations for economic growth' (Leiden University, Center for Research in Public Economics, Research Memorandum 1992-02).

Bredesen, I. and S. Strobel (1991) 'Trade as an engine of growth: The Lewis versus Riedel controversy revisited' *Intereconomics* (March-April), pp. 51-57.

Buitelaar, R. and J. A. Fuentes (1991) 'La competitividad de las economías pequeñas de la región' *Revista de la CEPAL* Vol. 43, pp. 83-97.

Bulmer-Thomas, V. (1988) 'The new model of development in Costa Rica' in: Bulmer-Thomas, V. *Studies in the Economies of Central America* (London/Oxford: MacMillan and St. Antony's), pp. 216-234.

Bulmer-Thomas, V. (1989) 'Can regional import substitution and export-led growth be combined?' in: G. Irvin, S. Holland (eds.) *Central America: The future of economic integration* (Boulder: Westview), pp. 67-88.

Bulmer-Thomas, V. (1993) 'A long-run model of development for Central America' *The European Journal of Development Research*, pp. 135-172.

Buttari, J.J. (1992) 'Economic policy reform in four Central American countries: Patterns and lessons learned' *Journal of Interamerican Studies and World Affairs* Vol. 34 (Spring), pp. 197-214.

Díaz-Alejandro, C. F. (1974) 'Some characteristics of recent export expansion in Latin America' in H. Giersch (ed.) *The international division of labour: Problems and perspectives* (Tübingen), pp. 215-236.

Dijkstra, A. G. (1993) 'The limits of economic policy in El Salvador' in W. Pelupessy and J. Weeks (eds.) *Economic Maladjustment in Central America* (New York/London: St. Martin's Press), pp. 53-66.

Dijkstra, A. G. and J. van der Wijk (1995) 'Manufacturing exports from Costa Rica' in R. Buitelaar and P. van Dijck (eds.) *Latin America's New Insertion in the World Economy: Towards systemic competitiveness in small economies* (London: MacMillan, forthcoming).

Dijkstra, A. G. and C. Rivera Alemán (1995) 'Export Processing Free Zones in El Salvador' in R. Buitelaar and P. van Dijck (eds.) *Latin America's New Insertion in the World Economy: Towards systemic competitiveness in small economies* (London: MacMillan, forthcoming).

Edwards, S. (1993) 'Latin American economic integration: A new perspective on an old dream' *The World Economy*, Vol. 16, pp. 317-338.

Gindling, T.H., and A. Berry (1991) 'Costa Rica' in S. Horton, R. Kanbur, D. Mazunder (eds.) *Labor Markets in an Era of Adjustment* (EDI Symposium Volume, Washington).

Hamilton, N. and C. Thompson (1994) 'Export promotion in a regional context: Central America and Southern Africa' *World Development*, Vol. 22, No. 9, pp. 1379-1392.

Havrylyshyn, O. and M. Wolf (1987) 'What have we learned about South-South trade?' in Havrylyshyn, O. (ed.) *Exports of developing countries: How direction affects performance* (World Bank Policy Working Paper, Washington), pp. 149-166.

Inter-American Development Bank (1992) *Socioeconomic Report Costa Rica*, No. DES-13 (Washington).

Irvin, G. and S. Holland (1989) 'Central American integration: A suitable case for treatment', in G. Irvin and S. Holland (eds.) *Central America: The Future of Economic Integration* (Boulder: Westview), pp. 1-21.

Kaplinsky, R. (1993) 'Export processing zones in the Dominican Republic: Transforming manufactures into commodities', *World Development*, Vol. 21, pp. 1851-1865.

Krueger, A. O. (1978) 'Alternative trade strategies and employment in LDCs' *American Economic Review*, Vol. 68, pp. 270-274.

Latin America Monitor: Central America, several issues.

Robson, P. (1993) 'The new regionalism and developing countries'. *Journal of Common Market Studies*, Vol. 31, No. 3, pp. 329-348.

Salazar Candell, R. (1993) 'El Salvador: Política industrial, comportamiento empresarial y orientación para la transformación industrial', *Realidad Económico-Social* Vol. 5, pp. 235-270.

United Nations, *Commodity Trade Statistics*. New York, several years.

United Nations (1979) *Yearbook of Trade Statistics 1979* (New York).

Verspagen, B. (1992) *Uneven growth between interdependent economies: An evolutionary view on technology gaps, trade and growth* (Dissertation, University of Limburg, Maastricht).

Webb, M. and J. Fackler (1993) 'Learning and the time interdependence of Costa Rican exports' *Journal of Development Economics* Vol. 40, pp. 311-329.

Weeks, J. (1985) *The Economies of Central America* (New York: Holmes and Meyer).

Willmore, L. (1991) 'Políticas industriales en Centroamérica' *Revista de la CEPAL* Vol. 48, pp. 101-112.

Appendix table 1. Costa Rica: Shares of manufacturing trade to CACM, in %

ISIC Branch	*1980*	*1981*	*1982*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*
Food products	8	7	5	5	3	2	3	5	7
Beverages	96	64	0	91		0	0	0	57
Tobacco	0	0	0	0	0	0	0		
Textiles	91	89	77	59	41	22	21	52	29
Wearing apparel	76	67	51	44	10	9	6	3	2
Leather products	56	64	50	51	57	54	53	61	38
Footwear	82	77	66	73	79	70	54	46	33
Wood products	66	62	51	57	34	30	32	33	25
Furniture	48	29	16	0	0	0	2	2	1
Paper and products	86	86	80	95	84	68	47	41	36
Printing and publishing	85	72	70	57	37	22	20	30	15
Industrial chemicals	69	49	50	64	37	37	39	44	42
Other chemicals	74	74	72	70	66	56	49	47	45
Petroleum refineries	0	0	0	0	0	0	0	1	2
Rubber products	94	92	88	75	60	5	39	51	48
Plastic products	82	72	63	60	42	18	29	32	29
Pottery, china, earthenware	79	83	81	77	75	46	36	11	5
Glass and products	96	86	73	94	79	43	55	26	20
Other non-met. mineral prod.	81	5	8	29	31	24	13	18	26
Iron and steel	80	73	61	62	50	59	68	67	71
Non-ferrous metals	63	80	70	27	32	10	25	4	4
Fabricated metal products	90	89	84	85	85	68	67	75	72
Non-electric machinery	76	55	53	69	46	43	43	51	41
Electric machinery	55	63	52	57	52	30	35	33	31
Transport equipment	79	56	59	52	38	0	0	5	0
Profess. & scient. equipm.	0	0				0		0	0
Other manufactures	90	89	85	77	42	10	7	5	2
Total	36	31	28	27	19	10	14	16	16

Source: Elaboration of UN Commodity Trade Statistics, several years, and conversion table.

Appendix table 2. El Salvador: Shares of manufacturing trade to CACM, in %.

ISIC Branch	*1980*	*1981*	*1982*	*1984*	*1986*	*1987*	*1988*	*1989*
Food products	3	4	5	1	1	2	4	6
Beverages	100	100	92	89	68	75	70	78
Tobacco			0					
Textiles	78	77	66	55	30	38	39	41
Wearing apparel	99	98	99	95	53	54	62	47
Leather products	100	100	96	100	81	93	100	51
Footwear	100	99	99	95	42	41	72	68
Wood products	70	77	0		0	0	0	44
Furniture	99	99	100	94	29	45	99	90
Paper and products	99	99	98	98	90	90	95	92
Printing and publishing	98	96	98	98	80	90	97	96
Industrial chemicals	85	84	81	85	72	83	87	90
Other chemicals	90	86	83	88	81	78	87	83
Petroleum refineries	93	65	74	21	26	22	22	22
Rubber products	96	89	87	97		72	96	94
Plastic products	98	97	98	93	75	78	80	85
Pottery, china, earthenware								
Glass and products	47					99	100	
Other non-met. mineral prod.	98	94	99	100	82	98	100	87
Iron and steel	86	100	100	100	98	92	100	94
Non-ferrous metals	77	82	86	95	94	93	91	85
Fabricated metal products	5	76	66	100		54	100	0
Non-electric machinery	90	34	75	96	83	95	98	89
Electric machinery	98	99	99	96	91	88	98	99
Transport equipment	96	98	96	100	88	64	99	98
Profess. & scient. equipm.	96	87	88	94				
Other manufactures	94	88	92	92	52	48	86	80
Total	44	48	49	25	12	20	25	33

Source: Elaboration of UN Commodity Trade Statistics, several years, and conversion table.

Appendix table 3. Costa Rica: Shares of manufacturing trade to developing countries (South), in %

ISIC Branch	*1980*	*1981*	*1982*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*
Food products	12	15	12	12	9	5	9	12	13
Beverages	100	82	75	91		99	2	92	86
Tobacco	0	0	0	13	0	0	16		
Textiles	100	99	93	68	54	33	29	72	51
Wearing apparel	98	94	76	49	16	14	7	7	10
Leather products	58	67	51	57	58	62	64	72	57
Footwear	85	90	71	83	89	84	62	54	43
Wood products	71	69	70	72	49	43	41	38	31
Furniture	58	80	67	14	9	6	4	8	7
Paper and products	100	98	99	99	98	85	69	72	58
Printing and publishing	99	97	98	78	82	57	62	83	34
Industrial chemicals	100	97	93	99	79	79	96	94	88
Other chemicals	100	100	99	97	99	94	97	88	84
Petroleum refineries	87	98	96	88	0	9	0	4	6
Rubber products	100	100	97	79	64	6	46	56	55
Plastic products	93	90	81	75	68	38	40	40	47
Pottery, china, earthenware	100	94	93	98	97	65	53	22	19
Glass and products	99	97	94	99	91	68	86	87	89
Other non-met. mineral prod.	97	99	96	46	85	58	96	94	98
Iron and steel	100	100	100	100	78	98	97	98	98
Non-ferrous metals	79	93	85	54	84	78	36	72	32
Fabricated metal products	98	100	99	97	98	89	88	91	94
Non-electric machinery	95	97	99	93	84	82	73	71	67
Electric machinery	81	92	91	80	78	60	58	43	40
Transport equipment	82	62	72	61	47	4	5	16	3
Profess. & scient. equipm.	49	100				47		100	100
Other manufactures	99	98	97	85	55	17	16	10	7
Total	46	48	43	38	31	19	26	29	28

Source: Elaboration of UN Commodity Trade Statistics, several years, and conversion table.

Appendix table 4. Costa Rica: Shares of physical capital in different branches, in %

Branch	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*
Food products	61	61	62	59	58	55	54
Beverages	85	85	84	83	81	85	85
Tobacco	82	82	80	79	79	78	78
Textiles	57	56	61	59	68	67	66
Wearing apparel	47	45	27	6	13	16	20
Leather products	70	69	68	65	72	72	68
Footwear	57	56	57	57	70	69	64
Wood products	54	51	41	38	36	29	29
Furniture	58	56	63	58	61	62	64
Paper and products	73	75	72	70	71	68	71
Printing and publishing	47	51	53	54	48	49	45
Industrial chemicals	78	76	73	69	69	67	72
Other chemicals	67	64	61	65	61	60	63
Petroleum refineries	78	77	80	75	73	76	72
Rubber products	15	15	15	15	15	15	15
Plastic products	60	57	55	58	58	56	54
Pottery, china and earthenware	58	55	56	63	64	61	59
Glass and products	41	33	15	15	5	6	13
Other non-met. mineral prod.	81	78	75	78	67	75	75
Iron and steel	69	65	65	69	65	63	62
Non-ferrous metals	72			71	71	72	72
Fabricated metal products	50	44	35	32	38	46	49
Non-electric machinery	58	53	50	56	50	38	37
Electric machinery	77	74	75	76	70	68	66
Transport equipment	72	68	66	67	65	68	69
Profess. & scient. equipm.	68	67	70	66	70	68	68
Other manufactures	65	64	57	64	54	53	54

Source: UNIDO Industrial Statistics and own calculations.

Appendix table 5. Costa Rica: Shares of human capital in different branches, in %

Branch	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*
Food products	30	31	31	34	33	36	38
Beverages	13	13	14	15	16	13	13
Tobacco	16	16	18	20	19	20	20
Textiles	20	22	19	18	6	4	6
Wearing apparel	18	20	25	30	14	0	7
Leather products	9	12	14	14	4	4	7
Footwear	13	17	17	13	2	0	3
Wood products	35	37	45	50	50	53	55
Furniture	27	30	27	32	29	26	25
Paper and products	21	19	23	25	25	27	25
Printing and publishing	37	36	36	38	42	41	44
Industrial chemicals	17	19	22	25	25	27	21
Other chemicals	26	28	32	28	31	31	29
Petroleum refineries	19	21	18	22	23	20	23
Rubber products	47	46	53	56	53	52	52
Plastic products	32	33	36	33	33	33	34
Pottery, china and earthenware	27	33	34	27	26	28	29
Glass and products	38	46	63	64	69	70	67
Other non-met. mineral prod.	12	15	18	16	24	18	19
Iron and steel	20	23	25	22	26	27	29
Non-ferrous metals	13			15	13	14	17
Fabricated metal products	30	33	44	46	39	32	31
Non-electric machinery	27	29	35	31	32	39	43
Electric machinery	17	20	20	19	22	23	25
Transport equipment	17	21	24	24	24	22	23
Profess. & scient. equipm.	17	19	19	22	17	20	22
Other manufactures	0	0	0	0	0	1	0

Source: UNIDO Industrial Statistics and own calculations.

Appendix table 6. El Salvador: Shares of physical capital in different branches, in %

Branch	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1991*
Food products	64	64	74	76	79	77	84
Beverages	78	82	83	84	85	87	84
Tobacco	88	88	91	91	88	92	90
Textiles	61	58	65	73	66	67	64
Wearing apparel	58	56	58	62	60	65	61
Leather products	61	64	53	61	61	70	73
Footwear	47	61	61	58	79	76	53
Wood products	38	25	55	72	73	70	80
Furniture	65	75	70	69	67	77	69
Paper and products	76	73	74	80	73	78	76
Printing and publishing	62	67	68	70	77	75	78
Industrial chemicals	75	75	79	87	87	88	88
Other chemicals	76	76	80	81	85	84	84
Petroleum refineries	94	94	95	97	95	95	98
Misc. petroleum and coal prod.	90	90	87		81		80
Rubber products	68	64	72	74	71	82	74
Plastic products	64	60	67	72	74	75	81
Pottery, china and earthenware							70
Glass and products			61		82	84	64
Other non-met. mineral prod.	37	64	72	78	79	74	78
Iron and steel	78	62	66	69	82	75	76
Non-ferrous metals	39	54	68	67	70	81	
Fabricated metal products	53	60	60	67	73	76	63
Non-electric machinery	62	64	71	78	79	82	67
Electric machinery	57	71	76	79	75	83	83
Transport equipment	53	19					80
Profess. & scient. equipm.	59	66	66	75	71	85	75
Other manufactures	64	66	71	67	69	70	72

Source: UNIDO Industrial Statistics and own calculations.

Appendix table 7. El Salvador: Shares of human capital in different branches, in %

Branch	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1991*
Food products	11	16	9	9	12	14	9
Beverages	11	10	9	8	10	10	11
Tobacco	7	9	6	6	9	6	8
Textiles	13	20	10	7	17	19	17
Wearing apparel	0	8	0	0	12	12	12
Leather products	11	14	20	9	18	16	15
Footwear	17	17	13	14	7	10	14
Wood products	6	28	7	6	9	12	0
Furniture	4	0	0	3	7	11	11
Paper and products	11	16	11	9	17	16	13
Printing and publishing	13	14	12	12	13	17	10
Industrial chemicals	11	14	10	6	8	9	8
Other chemicals	11	13	9	8	8	10	9
Petroleum refineries	5	5	5	3	5	4	2
Misc. petroleum and coal prod.	5	5	7		14		12
Rubber products	10	15	10	7	13	10	8
Plastic products	11	17	10	8	13	14	5
Pottery, china and earthenware							11
Glass and products			10		0	0	17
Other non-met. mineral prod.	33	21	13	9	12	17	10
Iron and steel	5	13	7	8	6	15	9
Non-ferrous metals	31	27	11	10	11	6	
Fabricated metal products	16	19	16	12	12	13	17
Non-electric machinery	16	18	9	6	11	12	21
Electric machinery	25	18	12	12	17	12	11
Transport equipment	8	30					13
Profess. & scient. equipm.	11	12	13	10	19	11	16
Other manufactures	9	13	4	5	11	14	12

Source: UNIDO Industrial Statistics and own calculations.