

# CEPAL

## Review

*Executive Secretary of ECLAC*  
Gert Rosenthal

*Deputy Executive Secretary*  
Carlos Massad

*Director of the Review*  
Aníbal Pinto

*Technical Secretary*  
Eugenio Lahera



UNITED NATIONS  
ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN  
SANTIAGO, CHILE, APRIL 1991

# CEPAL

## Review

---

Santiago, Chile

April 1991

Number 43

---

### CONTENTS

Democracy and economics. <i>Gert Rosenthal</i> , Executive Secretary, ECLAC.	7
External events, domestic policies and structural adjustment. <i>Carlos Massad</i> .	11
Latin America and the new finance and trade flows. <i>Robert Devlin and Martine Guergil</i> .	23
The competitiveness of Latin American industry. <i>Gérard Fichet</i> .	51
Europe 92 and the Latin American economy. <i>Miguel Izam</i> .	67
The competitiveness of the small economies of the region. <i>Rudolf Buitelaar and Juan Alberto Fuentes</i> .	83
Transfer of technology: the case of the Chile Foundation. <i>Torben Huss</i> .	97
Debt conversion and territorial change. <i>Antonio Daher</i> .	117
The State and poverty in Costa Rica. <i>Marvin Taylor-Dormond</i> .	131
Prebisch and the relation between agriculture and industry. <i>Carlos Cattaneo</i> .	149
Celso Furtado: Doctor Honoris Causa. <i>Wilson Cano</i> .	165
Guidelines for contributors to <i>CEPAL Review</i> .	169

## The competitiveness of Latin American industry

*Gérard Fichet\**

The contribution of science and technology to development is one of the dominant topics in these final years of the twentieth century. In the new form of industrial development, research and technological progress are indispensable for ensuring greater international competitiveness. These activities, in turn, are closely linked with government policies and national priorities in these fields. While the degree of implementation of such policies varies from one country to another, in all cases they are aimed at speeding up the commercial applications of scientific and technological advances. The industrialized countries and the so-called "Asian tigers" are basing their industrial restructuring on a certain number of poles of competitiveness or manufacturing niches with high technological density which will permit both forward and backward linkages. This redistribution of advantages will tend to be reflected in marked specialization at the level of the various branches of industry.

This article compares the industrial performance of countries from three regions: Asia, the Mediterranean region, and Latin America. It is observed that in Latin America there is a big gap between the region's industrial performance and its exports of manufactures: the export coefficient is far below that of the Asian and Mediterranean countries. Furthermore, the degree of external dependence, as measured by the coefficient of imported supply in the domestic demand for manufactures, is also more compressed in Latin America than in the other two regions. Consequently, in global terms the region is running the risk of falling behind with respect to the other regions as far as international competitiveness is concerned, and indeed Latin America is already seriously behind in the fields of research and technological progress.

\*Economic Affairs Officer in the Joint ECLAC/UNIDO Science and Technology Division.

## Introduction

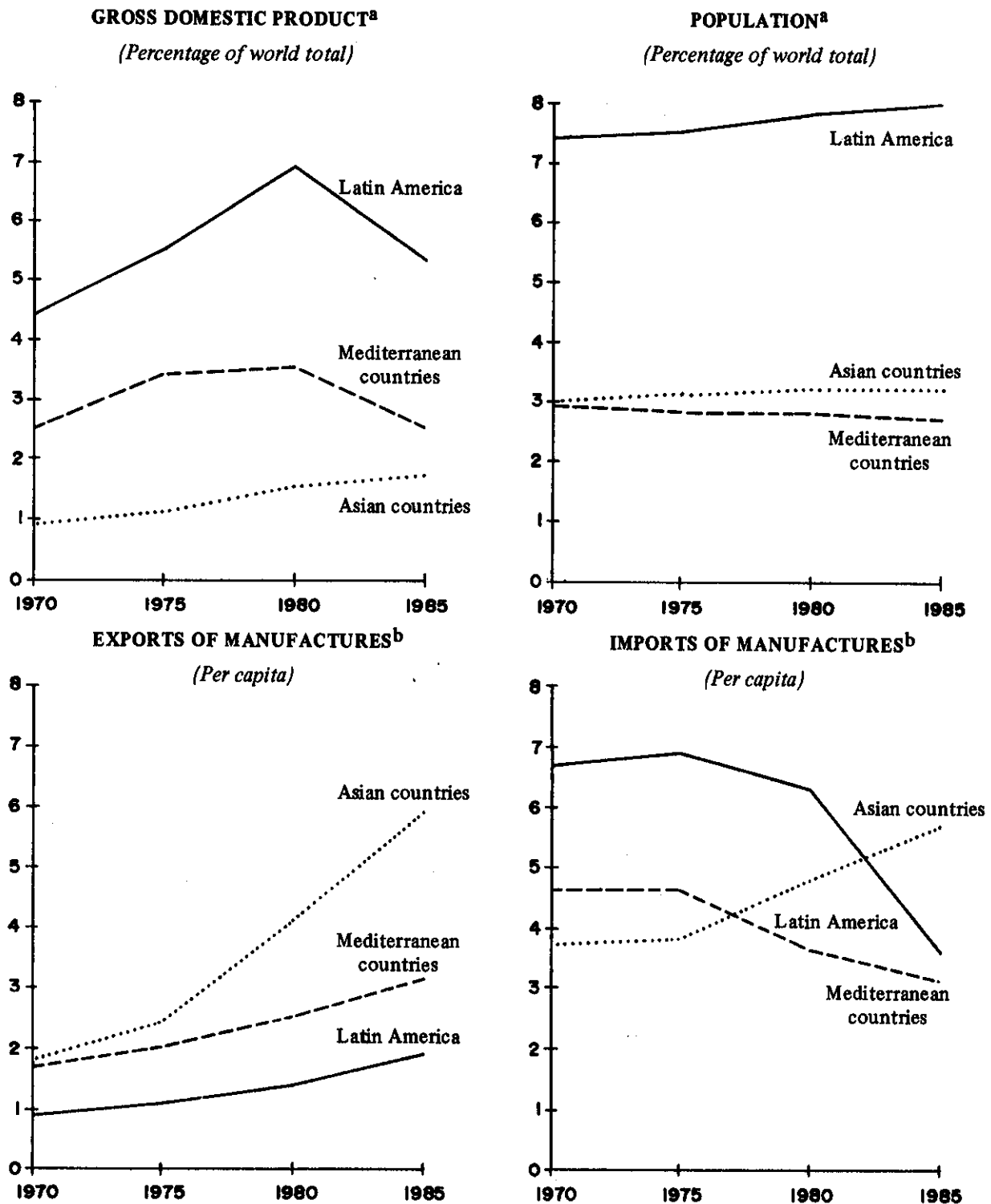
The technological innovation and development effort makes it possible to change production patterns in the industrial sector and increase productivity. In the industrialized countries, there is a close connection between international competitiveness and the incorporation of technical progress, as is shown by the fact that world trade in manufactured goods with the highest technological content grows more rapidly than that of other goods. Similarly, the lines of trade in which technological effort is concentrated at the world level are in a process of constant change (although always within the metal products, machinery and chemicals group), thus showing that the lasting presence of countries on world markets is heavily conditioned by their capacity to absorb technical progress and innovations.

The rises in the prices of crude petroleum and petroleum products in the 1970s further increased the trade and balance of payments problems already being experienced by a number of countries, both highly developed and developing. It was these facts, among others, which led the countries to put into effect industrial restructuring processes aimed at increasing their foreign exchange income and thus satisfying their energy and financial needs. This phenomenon brought about a profound upset in international economic relations, which had hitherto been based almost exclusively on the principle of comparative advantages. The industrialized countries in general and some developing countries in particular then moved towards a new form of insertion in the world productive system which heightened competition for the different international markets.

These new industrial strategies are based on a limited number of poles of competitiveness and seek to create both forward and backward production linkages. This has led to a fading of the structure of production aimed at favouring sales of a few products of high technological content and marked competitiveness. The domestic market, for its part, is being opened up to goods from abroad, but local producers of similar goods are not given any special assistance to help them enter the favoured group. Consequently, a marked redistribution of advantages is taking place among the industrialized and also the developing countries (especially recently industrialized ones), and this is tending to be reflected

Figure 1

SELECTED DEVELOPING REGIONS: FORM OF INSERTION  
IN THE WORLD ECONOMY, 1970-1985



Source: Joint ECLAC/UNIDO Industry and Technology Division.

<sup>a</sup>As percentages of the world total.

<sup>b</sup>Sections 5 to 8, less Division 68, of the Standard International Trade Classification (SITC), Statistical Papers, Series M, No. 34, Rev. 2, United Nations, New York, 1975.

in marked specialization at the level of the individual industry branches. This emerging technology favours the emergence of a liberal model which very often results in greater transfer of technology and greater collaboration with transnational production and finance enterprises in order to modernize the national economies.

Broadly, this is the general framework in which the world-level industrial restructuring has been taking place since the mid-1980s, which marked a turning-point in the economic evolution and insertion in the world economy of the countries of some developing regions: Latin America, the Mediterranean region and Asia.

Between 1970 and 1985, the relative importance of Latin America in the world, both in gross domestic product and in population, was much

greater than that of the Asian and Mediterranean countries, yet in external trade the Latin American region came last of the three. Its per capita exports of manufactures grew extremely slowly compared with the world average, while there was a growing gap not only with Asia but also with the Mediterranean region: the Asian countries increased their per capita external sales more than threefold, while the Mediterranean countries doubled theirs. With regard to imports, whereas those of the Asian countries grew with respect to the world average, the external purchases of the countries of Latin America and the Mediterranean region decreased, the relative deterioration being more serious in the case of our region than in that of the Mediterranean area (figure 1).

## I

### Latin America's degree of industrial development

The industrial production and external trade of the Latin American countries have displayed sharp differences from those of the traditionally industrialized and recently industrialized countries. This fact has been described in a number of works.<sup>1</sup> In order to facilitate the reasoned interpretation of these facts, table 1 shows the industrial added value and the exports of manufactures of some of the largest economies, indicating the place occupied by these countries with respect to each of these variables.

A point which emerges with striking force from this table is the lack of relation between the two variables in some Latin American countries.

<sup>1</sup> See: Fernando Fajnzylber, *Industrialization in Latin America: from the "black box" to the "empty space"*, "Cuadernos de la CEPAL" series, No. 60 (LC/G.1534/Rev. 1-P), Santiago, Chile, August 1990. United Nations publication, Sales No. E.89.II.G.5, and *Sobre la impostergable transformación productiva de América Latina, Pensamiento iberoamericano*, No. 16, Madrid, Iberoamerican Co-operation Institute (ICI)/Economic Commission for Latin America and the Caribbean (ECLAC), July-December 1989.

Table 1  
WORLD: RANKING OF COUNTRIES OF LARGE  
ECONOMIC SIZE IN TERMS OF INDUSTRIAL  
ACTIVITY AND EXPORTS, 1985

Country	Value added in industry	Exports of manufactures
United States	1°	3°
Japan	2°	1°
Federal Republic of Germany	3°	2°
France	4°	4°
United Kingdom	5°	6°
Italy	6°	5°
Canada	7°	7°
Brazil	8°	17°
Spain	9°	12°
India	10°	29°
Australia	11°	24°
South Korea	12°	9°
Netherlands	13°	8°
Mexico	16°	20°
Argentina	18°	28°
Yugoslavia	19°	21°
Hong Kong	24°	14°
Singapore	29°	15°

Source: Joint ECLAC/UNIDO Industry and Technology Division, on the basis of United Nations Industrial Development Organization (UNIDO), *Handbook of Industrial Statistics*, Vienna, 1988.

Thus, although Brazil occupies the eighth position in the world as an industrial power (the leading position after the seven biggest industrialized countries), it only comes seventeenth in exports of manufactures. There is a similar relation between the two variables in the case of Argentina (which occupies the 18th and 28th places, respectively). In Mexico, however, the relation between production and exports is more balanced. Thus, although Mexico's industrial added value is only a third of that of Brazil, its exports of manufac-

tures amount to 75% of those of the latter country.

In India—a country that has gone through an impressively large industrialization process—the imbalance is even greater: it occupies tenth place as an industrial power, but only 29th place as an exporter. In contrast, in Singapore, and above all in South Korea, the situation is quite different, thanks to a decisive policy of providing incentives for the industrial development of certain outward-oriented sectors of production.

## II

### Advances in Latin American industrialization

Latin America's advance in the industrial field may be measured by analysing the evolution of the coefficient of the imported element in domestic demand. Between 1970 and 1986, the imported component in the apparent consumption of manufactures as a whole varied very little, remaining at around 12-13%. The degree of external dependence was much smaller in the case of manufactured foodstuffs and non-durable consumer goods (2-3% for the former and 4-5% for the latter). As the technological complexity of the inputs or products consumed increases, however, the coefficient of external dependence likewise rises, standing at between 14% and 16% for intermediate goods in the period in question and 26%-28% for metal products and machinery.

The fluctuations which took place over the period 1970-1986 were more marked in the case of the latter two sectors than the traditional ones. First of all, the increase in hydrocarbon prices raised the import coefficient for intermediate goods from 12.8% in late 1973 to 16.8% in 1974, falling back to a lower level in subsequent years. In the metal products and machinery sector, up to 1981 the financial boom of the late 1970s and the policies of opening up markets led to an increase in imports, especially of non-electrical machinery and transport equipment, to the detriment of local production. There were also increases in imports of non-durable consumer

goods. After 1981, however, there was a generalized drop as the result of the economic crisis which hit the region.

The degree of industrial progress attained varies from one country to another and is closely connected with factors such as the economic size of the national market and the economic and industrial policies followed. In the large countries, the coefficients of imported supply in domestic demand are generally lower than in intermediate countries, which in turn registered lower coefficients than nations of small economic size. Thus, in Argentina and Brazil the imported component in the apparent consumption of the entire manufacturing sector was 6% in 1986, while in Mexico it came to 16% after a long period of stability at around 10%. In the countries of medium economic size, the coefficient of imported supply in national demand for manufactures varied from 14% in Peru to 25% in Chile, while in Colombia and Venezuela it came to 18% and 20%, respectively. In contrast, in the countries of smaller economic size, the coefficients were higher: 31% in Costa Rica and 34% in Ecuador.

These coefficients also varied from one country to another with respect to the same sector. Thus, in the large countries, the coefficient of imported supply in metal products and machinery was between 11% for Brazil and 12% for

Argentina, with a downward tendency in Brazil and an upward tendency in Argentina. In Mexico, the sharp contraction in national production in 1986 led to a marked reduction in imports of consumer goods and intermediate products and a still greater decline in external purchases of machinery, with the coefficient going from 29% in 1985 to 50% in the following year. For the same products, the intermediate countries registered coefficients ranging from 40% and 43% in Peru and Colombia to 68% in Chile. The smaller countries, for their part, imported around two-thirds of their domestic demand in the same year. A similar situation was registered with regard to the groupings of intermediate goods and non-durable consumer goods, but the variations were less marked than in the metal products and machinery sector. In the case of foodstuffs, there were practically no differences between the medium-sized and small countries.

The different levels registered by the various sectors are connected with the inherent nature of those sectors and the size of the markets in question. A more detailed survey indicates that in 1986 in Brazil, for example, the coefficient of imported supply for textiles was very small (0.8%), but for plastic goods it amounted to 5.5% and for machinery it came to 11%. A similar situation was observed in the other countries. In Colombia, for example, the coefficient for the textile sector was less than 3%, whereas for plastic goods it was 25% and for electrical machinery it came to 39%.

In general, the production of capital goods lags behind more than that of non-durable consumer goods. Within the capital goods sector, the production of machinery for specific uses is much less advanced than that for general use, because of the feeble capacity for the creation of technology and a science and technology policy which is limited by lack of resources.

Emphasis must be placed, however, on the achievements of the three largest countries of the region. In the area of non-electrical machinery, Brazil not only achieved a noteworthy degree of self-sufficiency but also developed some capacity for industrial design, not only for goods to supply the domestic market but also for export. Similar capacity was attained in Argentina and Mexico, although to a lesser extent: the unfavourable economic climate for investments

may have been the reason for the smaller dependence on imports in these two countries.

In the area of electrical machinery, the transnational corporations played an important part in the establishment of factories for the production of heavy equipment (such as electrical generators, transformers and circuit breakers) and transferred production processes to several countries of the region, especially Brazil and Mexico.

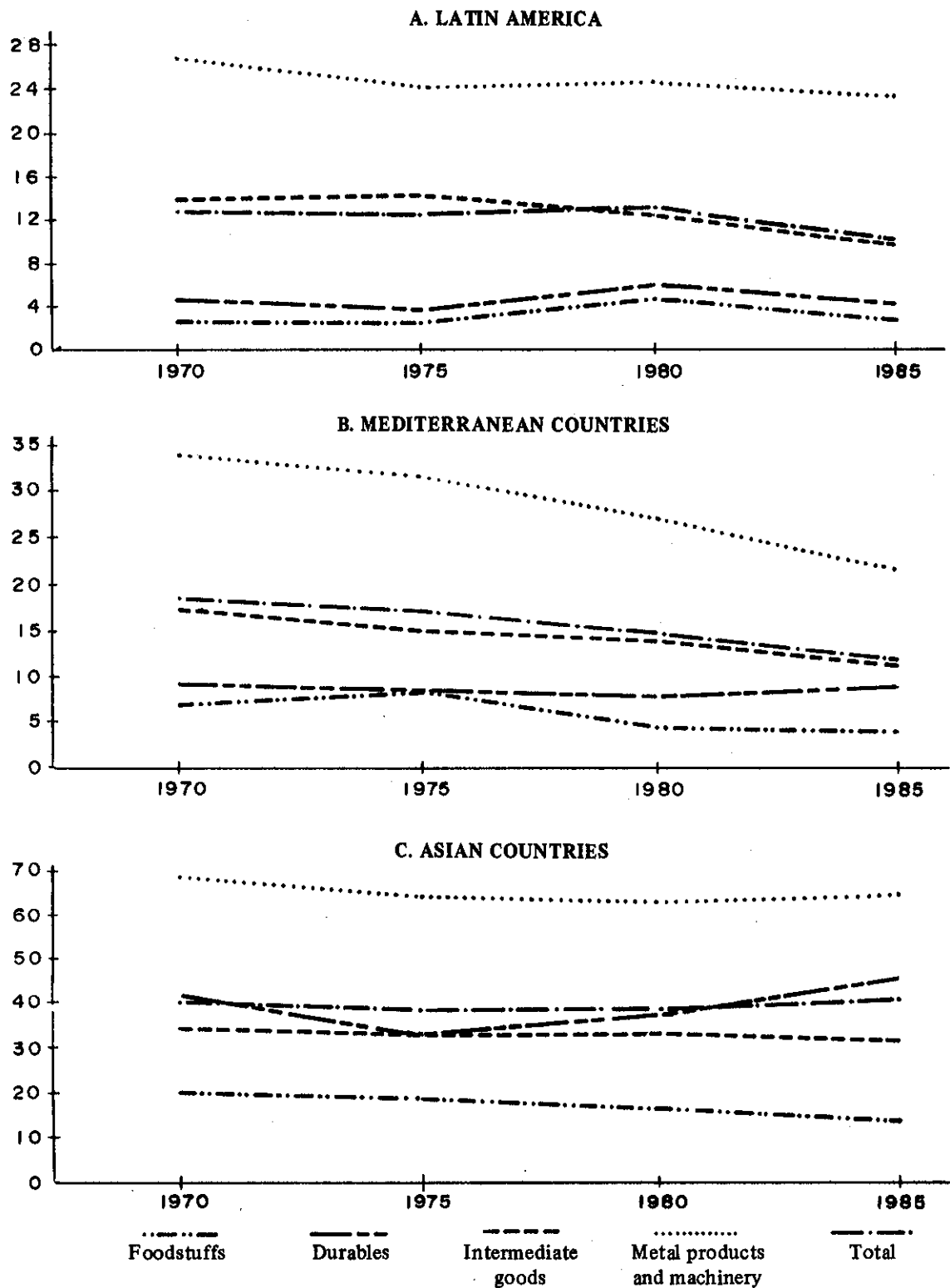
With regard to transport equipment, there were noteworthy advances in production and exports in the areas of shipbuilding (Brazil), construction of railway equipment (all three countries), the aeronautical industry (Argentina and Brazil) and the manufacture of motor vehicles (Brazil and Mexico).

Lastly, the industrialization processes which took place in Brazil and Venezuela succeeded in markedly reducing the external dependence of these two countries in relative terms, although the downward trend in this respect was more consistent in Brazil than in Venezuela. In Ecuador, the tendency was similar, but at a relatively higher level. In Colombia, Costa Rica, Mexico and Peru, there were no major fluctuations in the coefficients in the 1970s: they remained more or less stable, with imports growing in line with external demand. The crisis of the 1980s caused a very sharp contraction in Costa Rica's imports, while in Colombia, Mexico and Peru domestic demand and production fell at the same rate as external purchases. The imported component of domestic demand fluctuated in Argentina and Uruguay throughout the period, but showed some tendency to increase in the case of capital goods. Finally, in Chile the free market policy encouraged a marked and growing dependence on the imported supply of metal products and machinery and, to a lesser extent, non-durable consumer goods.

In this respect, a comparison between the Latin American, Mediterranean and Asian countries for the period 1970-1985 brings out various interesting points (figure 2). In the manufacturing sector, it was the Latin American countries which achieved the lowest levels of the coefficient of external supply of apparent consumption, although it should be noted that in these 15 years this coefficient remained almost unchanged at around 12%. In the case of the Asian countries,

Figure 2

**THREE SELECTED REGIONS: COEFFICIENT OF IMPORTS OF  
MANUFACTURES WITH RESPECT TO DOMESTIC DEMAND**



Source: Joint ECLAC/UNIDO Industry and Technology Division.



this coefficient for the manufacturing sector likewise remained stable, but at around 40%: i.e., almost four times the figure for Latin America. The Mediterranean countries, however, which had greater margins for achieving a higher degree of domestic industrialization, managed to reduce their coefficient by almost two-thirds over the same period of time. In all three regions, the sector which depended least on imports was that of foodstuffs, which had fallen to minimal figures in Latin America (around 2.5%), while in the Mediterranean countries it went down from 7% to 4% over the period, and in the Asian countries from 20% to 14%.

The metal products and machinery sector, on the other hand, was the sector which was most heavily dependent on imports in all three re-

gions: 65% of the domestic demand of the Asian countries was satisfied through imports in this sector, with the proportion remaining almost unchanged over the period. A similar tendency was displayed by Latin America, but at a lower level of only 23%. The Mediterranean countries, in contrast, reduced the coefficient of imported supply in their metal products and machinery sector by over 60%. In the case of intermediate goods, both the Latin American and the Mediterranean countries managed to bring down this coefficient, and this trend became even more marked in 1985 with the world crisis. In the Asian countries, however, imports once again grew almost as fast as domestic demand, so that the external dependence of this sector was almost three times greater, in relative terms, than that of the Latin American and Mediterranean countries.

### III

## External trade and industrialization

The traditional type of intersectoral complementation corresponds to the classical scheme of the international division of labour in which the countries which produce strategic raw materials and non-renewable natural resources trade these items for capital goods and consumer products. Another type of complementation is that in which there is a mutual interchange of locally produced industrial goods involving the intensive use of capital rather than of human resources.

In recent years, various indicators have been used to define the level of industrial development of a country and, ultimately, its degree of insertion in international trade. Among these indicators is the value of their total production and the components of their external trade. The differences between the various developing regions become more marked, however, when the index used is the relative weight of those sectors which stand out because of their dynamic effect on the development of manufacturing, such as the chemical industry and the production of machinery and transport equipment. These mature industries, which are generally capital-intensive, represent the threshold to a new phase of indus-

trialization involving the production of goods which make intensive use of human resources and have a medium or high content of technology.

At the same time, the branches of industry with a high technological content account for an increasingly significant proportion of the external trade of these regions and indeed of world trade as a whole.

Thus, if we compare the export structures of the three regions we observe a broadly similar pattern: the foodstuffs branch has declined (with its relative importance going down by some 50% to make it the relatively least important industrial sector for the Asian and Mediterranean countries, although not for Latin America), while the more dynamic sectors have grown rapidly. In the latter case, the total share of chemical products and metal products and machinery in Latin America's exports increased by a factor of 2.9, while in the case of the Asian countries it grew by a factor of 2.6. In the case of the Mediterranean countries, this proportion grew by a factor of only 1.3, since already in 1970 they had a substantial export base in these lines of production which was more than double that of the other

two regions. In 1986, exports of chemical products and metal products and machinery by the Asian and Mediterranean countries represented 43% of their total exports of manufactures and thus formed their main export line, whereas in the case of Latin America these sales did not amount to more than 32% of the respective total, with the intermediate products sector consistently being the most important (37%), mainly because of the sales of copper and iron and steel products.

With regard to the structure of their imports of manufactures, Latin America and the Mediterranean countries showed a certain similarity: foodstuffs did not account for more than 6% of the total, while non-durable consumer goods amounted to between 6% and 10%. Intermediate products, for their part, formed about one-sixth of their imports.

The strategic sector was that of chemicals and metal products and machinery, whose relative weight in industrial imports was even greater than in exports: purchases of these types of goods abroad represented 64% of the total imports of manufactures of the Mediterranean countries (a proportion which remained almost unchanged during the period 1970-1986) and 74% of the corresponding imports by Latin America in 1986. With regard to the Asian countries, their imports of food products were no greater in relative terms than in the above-mentioned cases, nor were their imports of intermediate products, but the share of non-durable consumer goods was relatively greater (one-fifth of the total). The main difference, however, lay in the relative weight of the products of the most dynamic sec-

tors, which was less than that observed in Latin America and the Mediterranean countries but showed a steady upward trend (from 52% to 58% of the total between 1970 and 1986). The structure of the gross value of manufacturing production in the three groups of countries was less unbalanced between its different components than in the case of exports and imports, but the changes which took place in each grouping followed the trends registered in foreign trade.

It should be noted, however, that the relative share of the most dynamic sectors in the gross value of production was less than their share in exports. Thus, chemicals and metal products and machinery represented a little over 34% of the total industrial production of the Mediterranean countries, whereas the external sales of these products came to over 43% of their total exports of manufactures. A similar situation was observed in the Asian countries, where the respective percentages were 36% and 43%. These differences showed a tendency to increase with time, since at the beginning of the 1970s both percentage shares were on a similar level, but subsequently exports grew much faster than production. There was a similar trend in Latin America, but the results seem to indicate that this region did not take full advantage of the dynamic world demand for these products, for in 1970 the share of chemicals and metal products and machinery in the gross value of manufacturing production came to 29%, whereas the share of these products in exports was only 11%. In 1986, the two proportions both stood at 32%, which was a situation similar to that of the Mediterranean countries in 1970.

## IV

### Sectoral industrial specialization

Structural relations of complementarity can be identified by distinguishing between the sectors where the trade operations give a surplus and those where they do not. Analysis of the contribution made by each sector to the global manufacturing trade balance makes it possible to prepare sectoral profiles of industrial specialization

for each of them.<sup>2</sup> If the indicator for the contribution of a sector is positive, then its trade balance will be more favourable to the evolution

<sup>2</sup> See Centre d'études prospectives et d'informations internationales (CEPII), *Economie mondiale: la montée des tensions*, Paris, 1983.

of the whole than could be assumed from its percentage share in the overall trade in goods: consequently, the contribution by that sector to the global balance will be dynamic. If, on the other hand, the indicator for the sectoral contribution is negative, then the real contribution of

that sector to the manufacturing trade balance will be less than the percentage representing its relative share in global industrial imports or exports.

The expression for the contribution indicator (CONT) is:

$$\text{CONT}_k = 100 \times \frac{(\text{X}_k - \text{M}_k)}{(\text{X} + \text{M})/2} - 100 \times \frac{(\text{X} - \text{M})}{(\text{X} + \text{M})/2} \times \frac{(\text{X}_k - \text{M}_k)}{\text{X} + \text{M}}$$

I
II
III

where  $k$  = the sector,  $X$  = exports and  $M$  = imports.

Term I relates the trade balance of the industrial sector  $k$  to the average global trade in manufactures of the country.

Term II relates the global trade balance of the manufacturing sector with the average global trade in manufactures.

Term III shows the share of the trade flow of the sector in the global trade of the country.

#### 1. *Latin American countries with exports based mainly on their natural resources*

In many countries of the region, exports of goods with a high content of capital and technology have been very small, so that there has been a considerable deficit on the trade in these products. Their surpluses on the trade in industrially processed natural resources, in contrast, have helped to improve the overall manufacturing trade balance to some extent.

The processing of certain agricultural and marine products is of primary importance in Colombia, Costa Rica, Ecuador and Chile. Likewise, the processing of non-ferrous and ferrous metals in Chile and Venezuela; the manufacture of petroleum products in Colombia, Ecuador and Venezuela; the industrial processing of wood in Chile, Costa Rica and Ecuador, and the production of paper and pulp in Chile are activities whose indicators of their contribution to the trade balance, since they are clearly positive, confirm their dynamism compared with the other national industrial sectors. It is important to note, however, that metal resources in Chile, energy resources in Venezuela and food products in Ecuador have gradually been losing their position of almost monopolic predominance in favour of new sectors also based on natural resources.

Relatively few sectors producing non-durable consumer goods and intermediate products have made a major contribution. In the case of Costa Rica, mention might be made of the products manufactured under the Central American Economic Integration Treaty (fertilizers, pharmaceutical products and tyres). Within this group of countries, it was the Colombian productive sector which showed the greatest structural diversification. In 1986, it managed to make up for the deficit on the production of machinery, steel and heavy chemicals thanks to the very favourable performance of almost all the other sectors (especially textiles, clothing, footwear, printing and publishing, ceramics, miscellaneous manufactures, and, of course, processed food products and petroleum products).

The metal products and machinery sector has registered substantial deficits, since in a number of countries the opening up of the domestic market led to a breakdown in the prevailing industrialization model. In general, the disappearance of a large part of the subsidies, together with tariff liberalization, left the metal products and machinery sector open to external competition and, without the protection to which it had been accustomed, its activity fell off. On the other hand, however, the intermediate products needed for the manufacture of non-durable consumer goods were sometimes subsidized.

#### 2. *Latin American countries with diversified exports*

The present form of insertion of Argentina, Brazil and Mexico in international trade is departing from the traditional scheme exemplified by the foregoing cases. In these three countries, the relative size of the deficit on metal products and machinery is tending to go down and the trade surpluses achieved on a varied range of manufactures give grounds for expecting a certain

degree of equilibrium in the current balance on industrial goods (Mexico) or even a substantial surplus (Brazil). Despite the content of manufactures in the exports of these three countries, their low labour costs and the importance of their branches of manufacturing based on natural resources caused them to share certain features with the countries of the previous group. Their industrialization has caused their degree of complementarity with the industrialized countries supplying capital goods to do down, while it has increased their capacity to compete in some sectors (for example textiles, clothing, footwear, beverages, printing and publishing, steel and ceramics).

Brazil has for some time been the Latin American country with the highest degree of diversification of production. The reduction in the indicator of the current balance contribution of foodstuffs by almost 70% between 1970 and 1986 was partly offset by greater diversification towards new lines of production such as textiles, beverages, leather, rubber, plastics, steel, metal products and motor vehicles.

In Mexico, the economic crisis of the 1980s caused a reorganization of industry which brought big changes in the metal products and machinery industries. These industries managed to reduce their imported component appreciably, thus contributing to the improvement in the global trade balance, especially in the case of electrical machinery and motor vehicles. On the other hand, the net contribution of the foodstuffs sector changed from a declining positive sign to a markedly negative one, turning the country into a net importer of foodstuffs.

### *3. Comparison of the sectoral profiles of industrial specialization of the Latin American, Mediterranean and Asian countries*

The sectoral industrial specialization profiles of the Mediterranean and Asian countries evolved differently from those of the great majority of the Latin American countries, since their poles of specialization were more diversified (as measured at the three-digit level of the International Standard Industrial Classification of all economic activities (ISIC)).

Between 1970 and 1986, these countries managed to sharply reduce the almost monopolic advantages of a few sectors: foodstuffs (Philippines, Spain, Turkey), wood and clothing (Korea) and non-ferrous metals (Thailand). Instead, new lines of production of non-durable consumer goods emerged whose dynamism helped to improve the manufacturing trade balance. Among these lines are textiles (Turkey, Yugoslavia), clothing (Thailand, Yugoslavia, Turkey and Philippines), footwear (Korea, Yugoslavia and Thailand), furniture (Yugoslavia) and miscellaneous manufactures (Thailand, Philippines and Korea). At the same time, there was a reduction in the external dependence of many branches requiring intermediate goods and metal products and machinery, leading in some cases to a marked improvement in their contribution to the global trade balance. This occurred in the case of industrial chemicals (Spain and Philippines), iron and steel products (Spain, Turkey and Philippines), transport equipment (Korea, Yugoslavia and Spain) and electrical machinery (Philippines and Spain).

## V

### International competitiveness

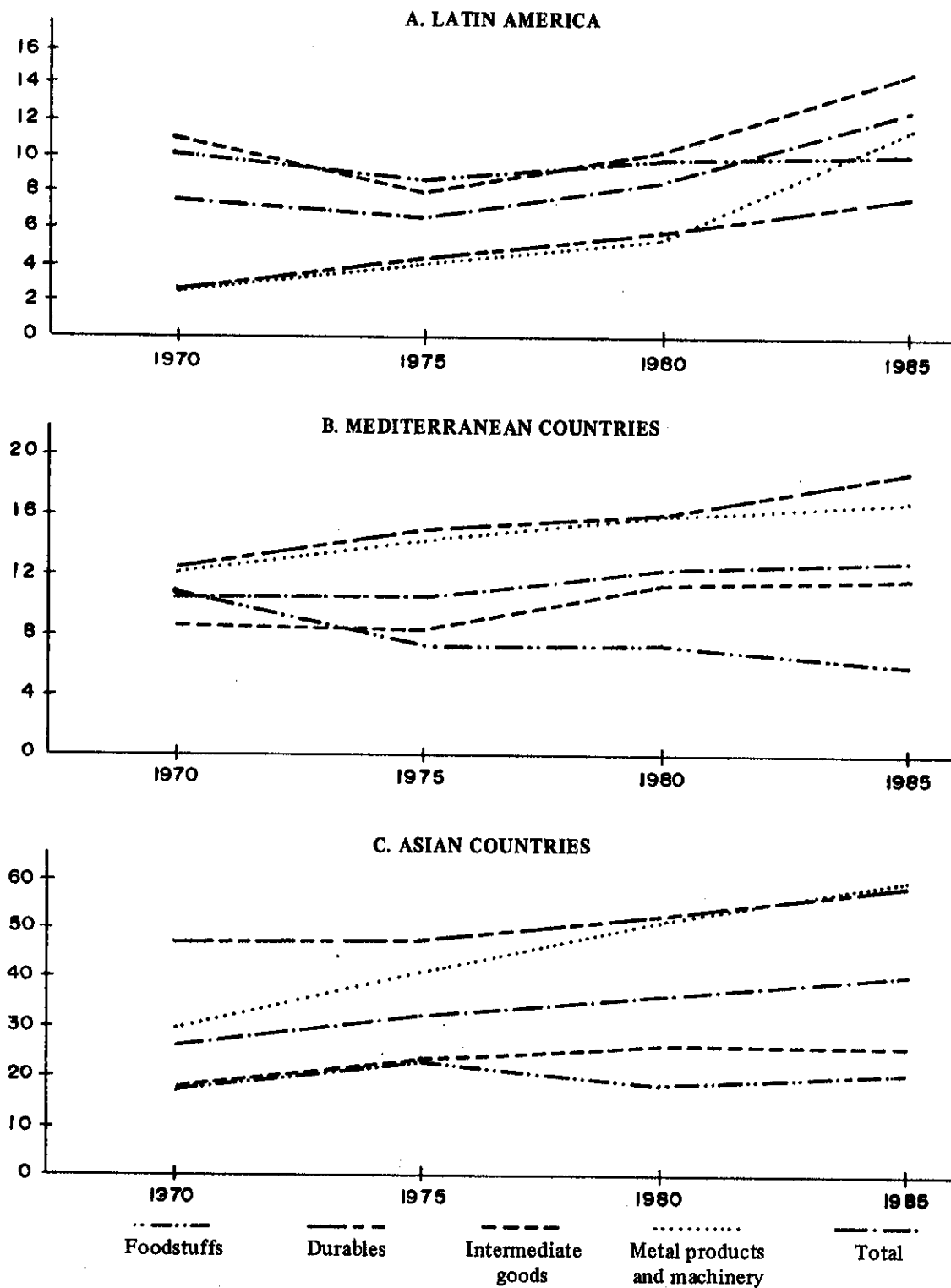
The increase in the world demand for manufactures has boosted the external trade and production of these goods. The magnitude of the growth in exports and imports of manufactured products is now considered a clear reflection of the industrial and economic dynamism of the country producing and selling them.

#### *1. Production and exports*

The Asian countries were, of course, those which registered the most dynamic trade of the three regions analysed (see figure 3 and figure 1). Thus, in 1970 these countries exported a little over 25% of their global manufacturing output,

Figure 3

THREE SELECTED REGIONS: COEFFICIENT OF  
EXPORTS WITH RESPECT TO OUTPUT



Source: Joint ECLAC/UNIDO Industry and Technology Division.

but the efforts made in subsequent years enabled them to increase this proportion steadily and vigorously until it came to 39% in 1985. The Mediterranean countries did not perform so well, because from an initial level of only 10.5% they increased it to a little under 13% in 16 years. It should be noted, however, that in 1970 the absolute values of the exports of both regions were very similar: US\$ 4 590 million for the Mediterranean countries and US\$ 4 430 million for Asia. In the same year, Latin America registered a percentage almost equal to that of the Mediterranean region (12.2%), subsequently registering a relatively greater growth rate than that of the Asian countries with regard to its exports of manufactures during the period 1970-1986 (65% as against 52%, respectively).

At the level of subsectors, in Latin America only the intermediate products group registered an export/output coefficient higher than that of the average for manufacturing, since foodstuffs lost relative importance as from 1983. Once again, the performance of intermediate goods as a whole was heavily influenced by the figures for processed natural resources such as hydrocarbons (where the two rounds of price rises in the 1970s played an important role), iron and steel products and non-ferrous metals. The Mediterranean and Asian countries, for their part, showed the same tendency at different relative levels. The export/output coefficients for non-durable consumer goods and metal products and machinery were a good deal higher than the average, while that for foodstuffs tended to stagnate or go down.

Asian exports of metal products and machinery represented 58% of total production (compared with 30% in 1970), outstanding among these sales being those of electrical machinery (99% of the total output was exported), non-electrical machinery (64%) and professional and scientific equipment (76%). Exports of non-durable consumer goods also represented a very substantial proportion of the total output of such items (59%), but their growth was not as strong as that of metal products and machinery because already in 1970 exports accounted for 47% of total output (mainly clothing, footwear and miscellaneous manufactures). These high percentages are quite exceptional and show that the sus-

tained growth of production depends heavily on sales to foreign markets.

In the Mediterranean countries, exports of non-durable consumer goods tended to occupy a higher place than those of metal products and machinery in the later years of the period in question, the export/output coefficients being 19% and 17%, respectively. Outstanding in the first group were exports of miscellaneous manufactures and footwear, the export/output coefficients for which came to 45% and 37%, respectively, followed by clothing (28%), while in metal products and machinery sales of non-electrical machinery and professional equipment were particularly noteworthy.

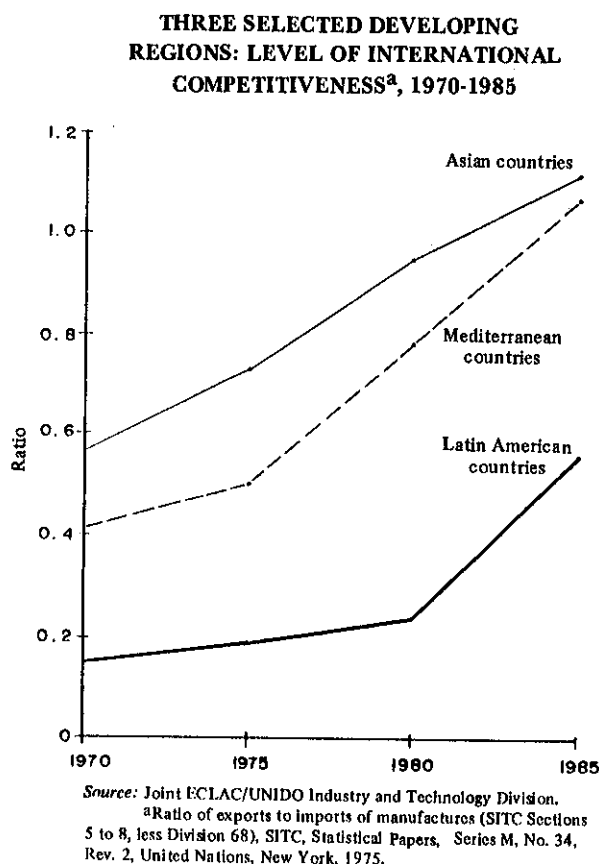
In Latin America, the highest export/output coefficients were registered for intermediate products, and this situation did not change over the period. Petroleum products and manufactures of non-ferrous metals were the products which boosted the figures not only for the intermediate goods group but also for manufactures as a whole.

## *2. The level of international competitiveness*

The increase in production to satisfy the growing external demand brought with it an increase in imports. The countries sought to offset the limitations which these purchases could impose on their growth and their current trade balance by making a big export effort and seeking to secure a continual improvement in their level of competitiveness.

In the manufacturing sector as a whole, the three regions achieved considerable progress in the last years of the period (figure 4). The competitiveness of the Asian and Mediterranean countries, as measured by the ratio of exports to imports of manufactures, grew steadily. Latin America, however, registered smaller increases in this respect, so that there was a further widening of the gap with the other two regions which already existed in 1970, when the competitiveness of Latin America was less than half that of the Mediterranean region and only a third of that of the Asian countries. The increase registered by the Latin American region in this respect between 1980 and 1985 was similar to that of the other two regions, but its background was different. Thus, in order to face up to the burden

Figure 4



of payments on the external debt and to avoid increased idle capacity of industrial installations due to the drop in domestic demand, maximum priority was given to the development of exports, while imports naturally went down as a result of the economic recession. Consequently, the improvement in Latin America's export/import ratio was more a mathematical expression than an indication of the greater competitiveness of Latin American products in general.

As far as the dynamic sectors were concerned, the increase in exports was most marked in non-electrical machinery and transport equipment. These two sectors were also very competitive in the Asian countries, while their level of competitiveness in the Mediterranean countries has always been high.

### 3. Competitiveness versus dependence on imports

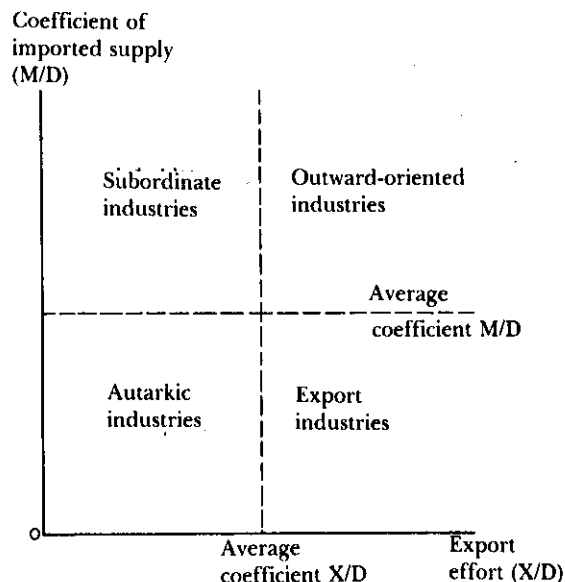
It is clear from the foregoing that there is a relation between the size of domestic demand and the coefficient of imported supply. The bigger the size of a market, the smaller this coefficient will be. This was indeed the case in each of the industrial groups studied.

As the size of the domestic market increases, the need to import goes down in relative terms, for industries can work more competitively and more efficiently if they have this higher demand. In contrast, the countries with smaller markets have a considerably higher coefficient of imported supply, since they cannot manufacture a wide range of products as efficiently as countries with larger markets.

The Scandinavian nations, the Mediterranean countries and the recently industrialized economies have sought to make up for the limitations imposed on them by the size of their respective markets through dynamic and selective industrial policies. They promote the production of some specific goods within each sector, while importing the parts or products for the same sector which they cannot produce competitively, in order that the final goods exported may compete at the international level in terms of both quality and price. This export effort is reflected in both a high export coefficient and a high imported component with respect to demand. This virtuous circle of imports-production-exports has not spread very rapidly in the Latin American countries, however, where the export coefficient is low with respect to demand and does not always reflect the vitality and the tendency to produce more competitively that should be imparted to it by the local market, at least in the larger countries.

The coefficients of imported supply (M/D) and export effort (X/D) for each sector with respect to the average coefficients for manufacturing as a whole may be expressed by distinguishing four categories in the national industrial structure with regard to domestic demand: i) subordinate industries (with above-average coefficients of imported supply and below-average coefficients of export effort); ii) outward-oriented industries (with coefficients of imported supply and of export effort higher than the average); iii) autarkic industries (with below-

**Figure 5**  
**COEFFICIENT OF IMPORTED SUPPLY AND**  
**EXPORT EFFORT, BY CATEGORIES OF INDUSTRIES**



average coefficients of imported supply and export effort), and iv) export industries (with above-average coefficients of imported supply and export effort) (see figure 5).

The industries in the lower right hand part of the figure produce goods which are competitive at the international level (export industries). In contrast, the production of the industries located in the upper left hand area depends heavily on imports in order to satisfy the domestic demand for this type of goods (subordinate industries). The industries located in the upper right hand part of the figure play a dynamic export role but require high levels of imports (outward-oriented industries). Finally, the industries located in the lower left hand area of the figure concentrate on supplying domestic demand and have low coefficients of both imports and exports (autarkic industries).

Table 2  
LATIN AMERICA: SECTORAL INDUSTRIAL SPECIALIZATION, 1985

ISIC Rev.2 <sup>a</sup>		Argentina	Brazil	Colombia	Costa Rica <sup>a</sup>	Chile	Ecuador <sup>b</sup>	Mexico	Venezuela
<i>1. Export industries</i>									
311.2	Food	*	*		*	*	*		
322	Wearing apparel			*			*		
323	Leather and Leather products	*		*					
324	Footwear		*	*	*				
342	Printing and publishing			*					
331	Wood and cork			*	*	*	*		
341	Paper and paper products		*			*			
353-4	Petroleum products	*	*					*	
361	Ceramics				*				
362	Glass products							*	
369	Non-metallic mineral products								*
371	Iron and steel basic industries		*						*
372	Non-ferrous metal basic industries					*			
<i>2. Outward-oriented industries</i>									
321	Textiles				*				
323	Leather products		*		*				
390	Other manufacturing industries	*	*	*	*				
351	Industrial chemicals	*	*					*	
352	Other chemical products				*			*	
353-4	Petroleum products						*		*
355	Rubber products				*				
352	Glass products				*				
371	Iron and steel basic industries	*		*					
372	Non-ferrous metal basic industries	*	*	*	*			*	*
381	Metal products				*				
382	Non-electrical machinery		*					*	
383	Electrical machinery							*	
384	Transport equipment		*		*				

Source: Joint ECLAC/UNIDO Industry and Technology Division.

<sup>a</sup> International Standard Industrial Classification of All Economic Activities (ISIC), Statistical Papers, Series M, No. 4, Rev. 2, United Nations, New York, 1969.

<sup>b</sup> 1984.



The advances which took place in Latin American industry as from 1970 led to a different kind of organization of manufacturing which gave way, by 1986, to concentrated areas of sectoral specialization. The industrial sectors shown in table 2 registered an exports/demand coefficient higher than the national manufacturing average. The coefficient of the imported supply needed to satisfy demand was used to distinguish between export industries and outward-oriented industries.

In the case of the former, the export effort created poles of competitiveness in sectors which used natural comparative advantages to process abundant native resources: foodstuffs (tropical or temperate zone), steel, non-ferrous metals, petroleum products, leather products, wood and paper. In addition to these products there were some non-durable consumer goods such as footwear, ceramics, printing and publishing and glass. The great majority of these branches made a net contribution of more than 2% to the current balance: that is to say, their real contribution to

trade was at least 2% higher than their relative share in it, which confirms the international competitiveness of these sectors.

The products of the outward-oriented industries are also exported, but at a higher cost in terms of the trade balance, since their imported component is higher than the industrial average. Particularly noteworthy in respect of these exports is Costa Rica, which benefitted under the Central American Economic Integration Treaty from the installation of various manufacturing firms whose production and exports, however, depend heavily on imported elements. At the sectoral level, the most outstanding lines of production are miscellaneous manufactures, industrial chemicals, non-ferrous metals (in Chile), steel, and exports of metal products and machinery (in Brazil, Costa Rica and Mexico). The experience built up with regard to exports by these sectors is very valuable and could help in the future to increase the competitiveness of a larger number of industrial branches or product lines.