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

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

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

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

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

A point (.) is used to indicate decimals.

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

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

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

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

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

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Review

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Democracy and economics*

Gert Rosenthal, Executive Secretary, ECLAC

The topic which has brought us together at this Round Table organized by FLACSO is by no means a trivial one. To begin with, the crisis which the Latin American societies have had to live through and the dizzy pace of the changes which are taking place in the world have brought into question all the traditional approaches of the social sciences. In this respect, it is necessary to reflect seriously on the basic premises of the various disciplines as well as on interdisciplinary co-operation in order to tackle social realities. Secondly, an analysis of the specific topic which has brought us together here (the relation between the social sciences and democratization) is particularly appropriate in the current Latin American context of the rebirth of democracy.

In general, all the social disciplines have a contribution to make to democratization. Thus, for example, among other aspects, *sociology* should identify the best and most effective forms of participation; *anthropology* should indicate the most suitable microrelations for the global support of democracy; *social psychology* should help to understand the swings in public opinion and aid in finding the underlying roots of mass phenomena, and *political science* should identify the forms of organization capable of providing a democratic interface between society at large and the State.

I think that now, in view of my profession and my current responsibilities as Executive Secretary of the Economic Commission for Latin America and the Caribbean, it is appropriate for me to approach democratization from the point of view of *economics*, in order to try to identify the interaction between economic and political phenomena and between development and democracy. This is a difficult task which was tackled in a notably profound and elegant manner, at least in our own organization, by José Medina Echavarría (Gurrieri, 1980). Another investigation which springs to mind is the monumental work of Albert O. Hirschman, who has devoted much of his life in one way or another to exploring the links between economics and politics. The reflections which I am going to set forth now were inspired by the contributions of both Medina Echavarría and Hirschman. I shall refer basically to the still unfinished quest for the causal relations between the two disciplines of economics and politics: what was originally known as political economy, before the academic separation of these two social sciences.

Until quite recently, the relations between economics and politics seemed to be perfectly unambiguous: economic phenomena determined political developments, or vice versa. To give only one example, it may be recalled that it was maintained that the forms of ownership of the means of production would determine the nature of the prevailing political régime.¹ Likewise, to give a more recent illustration, Guillermo O'Donnell held that import substitution policies were consistent with a certain type of political régime: i.e., bureaucratic authoritarianism (O'Donnell, 1975). Perhaps it is the extensive set of methodological instruments available to economics—more highly developed than those of the other social disciplines—which has encouraged attempts to seek the basis of politics in the principles of economics.

Similarly, political explanations have been put forward for economic phenomena, as

* Address delivered at the Round Table on the Social Sciences in the Democratization Process, beginning on 12 November 1990 in Santiago, Chile, as part of the Fourteenth Meeting of the Governing Council of the Latin American Faculty of Social Sciences (FLACSO).

¹ In the simplified terms of schematic Marxism, for example, it may be recalled that slavery corresponded to the ancient form of production and absolute despotism; serfdom corresponded to feudalism and the monarchy, and the proletariat corresponds to capitalism and bourgeois democracy.

for example the inflationary effect of increased public spending before an electoral process. There have even been politicians who have maintained that economics should be placed at the service of politics.² This crystal-clear determinism between what used to be known as the forces of production and production relations, or between the infrastructure and the superstructure, or between objective facts and ideology, was not restricted to the academic field. It also served to rationalize the establishment of those bureaucratic-authoritarian régimes which became the most important feature of what was until recently known as "real socialism".

Equally deterministic, although at the other extreme of the ideological spectrum, are the assertions that democracy is the political régime most compatible with the successful functioning of the market.³ In order to sustain this assertion, it is adduced that the most advanced industrialized economies are all representative democracies. Likewise, it is maintained that the market attains its greatest potential in political régimes which place the defence of individual rights before the rationale of the State. These régimes are inspired by a kind of negative determinism which holds that the best State is the least State.⁴

Experience gives grounds for doubting such single-minded determinism, however. The example of India shows that democracy can also function in societies with very low levels of income. On the other hand, many cases in Latin America have shown that the free functioning of the market mechanisms is frequently accompanied by very pronounced inequalities in income levels which may ultimately be dysfunctional for democracy. It should be remembered that democracy and democratization assume not only the existence of the basic rules of representative democracy but also the concepts of equity, participation and full citizenship.

Some of the events which took place in 1989 have in fact largely disproved the idea that there is a single set of determining economic and political factors which establish the links between the two disciplines, or that there is a global paradigm which foreordains the degree to which economics determines politics, or vice versa. As we were reminded by Adam Michnik, who was so closely linked with the series of events that shook Poland and the rest of Central and Eastern Europe in recent years, "what we have learned during the past year (the most extraordinary of the whole 44 years of my life) is that in history there is no determinism" (Michnik, 1990, p. 7).

In view of what has happened both in the socialist world and in Latin America, it has become abundantly clear that the relations between economics and politics are indeterminate and that the search for totalizing paradigms can become an obstacle to understanding, as Hirschman already maintained twenty years ago (Hirschman, 1971, p. 342-360). It is now claimed rather that instead of making yet another appeal for a single "integrated social science" it is more fruitful to build bridges, in a "decentralized" manner, bridges both between these two disciplines and between them and the rest of the social sciences (*ibid.*, pp. 1 and 2).

Adopting this approach and giving up any idea of an infallible, universal technique for weighing the influence of one phenomenon on another means abandoning the dream of finding a single synthetic paradigm which will integrate all the social disciplines. In this connection, with respect to the consolidation of democracy in Latin America, Hirschman

²"The aim of socialism is to overcome the supposed autonomy of economic factors predicated by liberalism" (Aron, 1972, p. 86).

³Supposedly because the market decentralizes, while planning centralizes. Charles Lindblom, however, has shown that this distinction is not so clear (Lindblom, 1977).

⁴The argument is that "order generated without any previous plan can considerably surpass any plans that men can invent" because of the "superior capacity (of capitalism) to make use of dispersed knowledge" (Hayek, 1988, p. 8).

has offered some suggestions on the relations between economics and politics which are extremely relevant to the topic of this discussion (Hirschman, 1986, pp. 176-182).

Firstly, all good things do not necessarily come together. Economists have long debated the possible contradictions between growth and equity, for example. The debate is not yet over, but it must be admitted that there is at least a possibility that sometimes, when pursuing two highly desirable objectives such as economic growth and social equity, the attainment of one of these objectives must be given priority over the other, although of course the imbalance thus created can later be corrected.

Secondly, and in the same line of thought, development and democracy do not necessarily go hand in hand. Thus, the 1980s —the so-called “lost decade” for development— coincided with a process of opening up to democracy and transition from authoritarian régimes to civil governments, in contrast with what happened in the Great Depression of the 1930s, when the economic recession was accompanied by authoritarian governments.

Thirdly, uncertainty with regard to the paths to follow and the firmness of the opinions held may even be a “democratic virtue”. Thus, excessively cut and dried action programmes may be incompatible with the ongoing negotiation which democracy demands, and this may also be why the technocrats have rediscovered the virtues of pragmatism.

Finally, this leaning to uncertainty fits in very well with the definition of democracy proposed by E. P. Thompson: a process which is set in motion without anyone knowing for certain exactly where it is going to end (Thompson, 1966, p. 101). This means that in democratic régimes —in contrast with what happens in technocracies— it is preferable that the pretensions of all the social sciences should be on the modest side.

How are the foregoing considerations reflected in ECLAC’s recent work? In this respect, I should like to refer to our proposal entitled *Changing production patterns with social equity* (ECLAC, 1990). In that document we maintain that the prime, common task of the countries of Latin America and the Caribbean — that of changing their production patterns within a context of growing social equity — must be carried out in a democratic, pluralistic and participative context. It is posited that this requirement should be fulfilled as a deliberate choice, not as the inevitable result of the emergence of other conditions.

In other words, we want development to take place in democracy, and we propose that specific efforts should be made to ensure that changing production patterns, equity and democracy back each other up. At the same time, however, we expressly recognize that there is nothing automatic or predetermined in all this. Facing up to such demands simultaneously represents a tremendous challenge which cannot be overcome on the basis of a single universally valid paradigm.

In conclusion, our proposal traces a course to follow and at the same time opens up a broad field for reflection and action on the part of the social sciences, in which some central issues for sociology and the political sciences stand out very prominently: reform of the State, transformation of the educational system, and the development of suitable forms of social consensus building and participation. In all these fields, reflection and action can only be carried out successfully through interdisciplinary co-operation. I wish to stress once again, however, that this does not mean that we are advocating a synthetic paradigm designed to integrate all the social disciplines and provide an infallible universal technique for weighing the influence of one phenomenon on another. It simply means that in respect of these issues, which are of such crucial importance for our times, we have before us a new field of co-operation between the regional institutions and the academic institutions working in the realm of the social sciences in the region.

Bibliography

- Aron, Raymond (1972), *Politique et économie dans la doctrine marxiste, Etudes politiques*, Paris, Gallimard.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1990), *Changing Production Patterns with Social Equity (LC/G.1601-P)*, Santiago, Chile, March. United Nations publication, Sales No.: E.90.II.G.6.
- Gurrieri, Adolfo (ed.) (1980), *La obra de José Medina Echavarría*, Madrid, Ibero-American Co-operation Institute: Ediciones Cultura Hispánica.
- Hayek, F.A. (1988), The fatal conceit, in W.W. Bartly III (ed.), *The Collected Works of F.A. Hayek*, vol. 1, Chicago, The University of Chicago Press.
- Hirschman, Albert O. (1971), The search for paradigms as a hindrance to understanding, *A Bias for Hope*, New Haven, Yale University Press.
- (1986), Notes on consolidating democracy in Latin America, *Rival Views of Market Society*, New York, Viking.
- Lindblom, Charles (1977), *Politics and Markets*, New York, Basic Books.
- Michnik, Adam (1990), The two faces of Europe, *New York Review of Books*, vol. XXXVII, No. 12, 19 July.
- O'Donnell, Guillermo (1975), *Reflexiones sobre las tendencias generales de cambio en el estado burocrático-autoritario*, Buenos Aires, Centro de Estudios de Estado y Sociedad (CEDES), August.
- Thompson, E.P. (1966), *The Making of the English Working Class*, New York, Vantage Books.

External events, domestic policies and structural adjustment

*Carlos Massad**

This article examines the drop in the per capita product of the region from 1981 onwards due both to the stagnation of per capita production capacity and the fact that the effective product was less than the potential product. Production capacity stagnated because investment fell to levels which were not high enough to ensure growth in the potential per capita product. This decline in investment, in turn, was due basically to the net transfers of resources abroad caused by the debt crisis and the severe deterioration in the terms of trade as from 1982.

The article posits that, in order for the region to grow at the rate of 5% per year, it would be necessary to invest between US\$ 75 and US\$ 85 billion more than is currently being invested. These resources could not be obtained from a single source. Solving the debt problem to the point of eliminating the net outward transfer of resources would supply only a third of the additional investment needed. Likewise, recovering the 1980 levels of the terms of trade—for which arduous negotiations and the application of difficult domestic policies would be needed—would provide only another third of the necessary financing. In any case, the fact that such resources were available would not automatically guarantee the necessary increase in investment, for which purpose strict specific policies would be required. The remaining third of the additional investment needed would require either greater indebtedness, or more saving, or both these things at once. It would also require increases in productivity and would need to be backed up by suitable domestic policies.

* Deputy Executive Secretary of ECLAC. The author wishes to express his thanks to Jaime Campos for his assistance in computation and general matters, and to Osvaldo Rosales for his comments and assistance with the bibliography.

Introduction

The hard facts of the situation, including political events, have obliged most of the nations of Latin America to apply structural adjustment policies. The measures taken in this respect were in a sense a shot in the dark, as no body of theory had been prepared in advance, and the countries of the region were not in a position either to choose their policies freely or to bother too much about their timeliness and the most suitable rate and sequence for their application.

Although a limited consensus is now beginning to emerge on this matter, economic theory is still not able to answer all the queries regarding the dynamics of the economic adjustment or the timeliness and sequence of the necessary reforms (World Bank, 1985; Feinberg, 1986; Helleiner, 1986).

Thus, for example, the scope and sequence of reforms aimed at trade and financial liberalization raise dilemmas with regard to economic policy, and the net effect continues to be the subject of a good deal of uncertainty in the theoretical analyses made on the subject (Zahler, 1980; McKinnon, 1982; Blejer and Sagari, 1988). Edwards (1987) is in favour of liberalizing the current account before the capital account and proposes a specific policy sequence: first, getting the fiscal deficit under control; secondly, reforming the domestic financial market and increasing interest rates, and finally, liberalizing the capital account.

A different view is taken by Lal (1987), who suggests first of all tackling the fiscal deficit and the distortions in the domestic capital market and then going on to a simultaneous drastic liberalization of the current and capital accounts, maintaining a floating exchange rate during these operations. The reasons for this would appear to be connected with political economics, since as these reforms would affect sectoral interests it would be necessary to act quickly to prevent the latter from organizing themselves.

Among the issues still under macroeconomic debate are those concerning matters such as the links between financial liberalization and saving and investment (Massad and Held, 1990) and between saving and interest rates (Khan and Knight, 1985; Massad and Eyzaguirre, 1990); the degree of intensity of the liberalization processes, that is to say, the final levels of the variables and

the periods of adjustment (Edwards, 1988); the optimum dimension and degree of government intervention (Ram, 1986), and the complementation or conflict between public and private investment (Blejer and Khan, 1984). Without a firm theoretical base, it is very difficult to clarify which costs could be attributed to the reform policies and which should be blamed on external or domestic events which may take place at the same time.

This paper examines the influence of such events on the product, distinguishing between the effects on production capacity and those on the effective product, and seeking to identify the main elements affecting these phenomena and

the options open to the countries of the region for returning to a climate of faster and sustainable growth.

Section I below explores the effects of external events on production capacity. Section II examines the factors behind the drop in the rate of utilization of that capacity. Section III seeks to give some idea of the growth needs and the resources that could be available for meeting them, and finally, section IV brings considerations of equity into the analysis and presents the main conclusions. The study covers Latin America and the Caribbean as a whole, but the main conclusions have been verified through studies of particular countries which are not presented here.

I

External events and the stagnation of production capacity

There were two main external events which affected the Latin American economies in the 1980s: the debt crisis, and the deterioration in the terms of trade. It was during this period that most of the adjustment policies were applied. The debt crisis in the 1980s and its consequences have been extensively analysed in recent economic publications, while the variations in the terms of trade and their effects on developing economies have been studied for more than half a century.

One way of getting an idea of the consequences of both the debt crisis and the deterioration in the terms of trade is to examine the historical behaviour of the gross domestic product.

Figure 1 shows the evolution of the per capita GDP of the countries of the region for the period between 1970 and 1989. It will be noted that in 1989 that product was lower than it had been in 1980¹. Such discouraging facts have led to the

assertion that the 1980s represented a lost decade as far as development was concerned.

This is not the whole story, however. There are two main factors that can explain the unfavourable evolution of the per capita GDP: the stagnation in production capacity, and a level of effective production which was lower than the existing capacity. In order to distinguish between the effects of these two factors, we can carry out a very simple exercise involving the estimation of the latter capacity by using figures on net investment and certain assumptions on the product/capital ratios (Ramos and Eyzaguirre, 1989). If we consider the product/capital ratio registered in the 1970s as being valid for the 1980s, then we can calculate the production capacity for the latter decade, assuming also that the employment level of 1980 remains unchanged (see Appendix). Figure 1 also shows the results of this exercise and gives a comparison of the effective GDP with the potential GDP (or production capacity). It will be seen from this that in 1989 the potential per capita GDP was some 17 percentage points higher than the effective level.

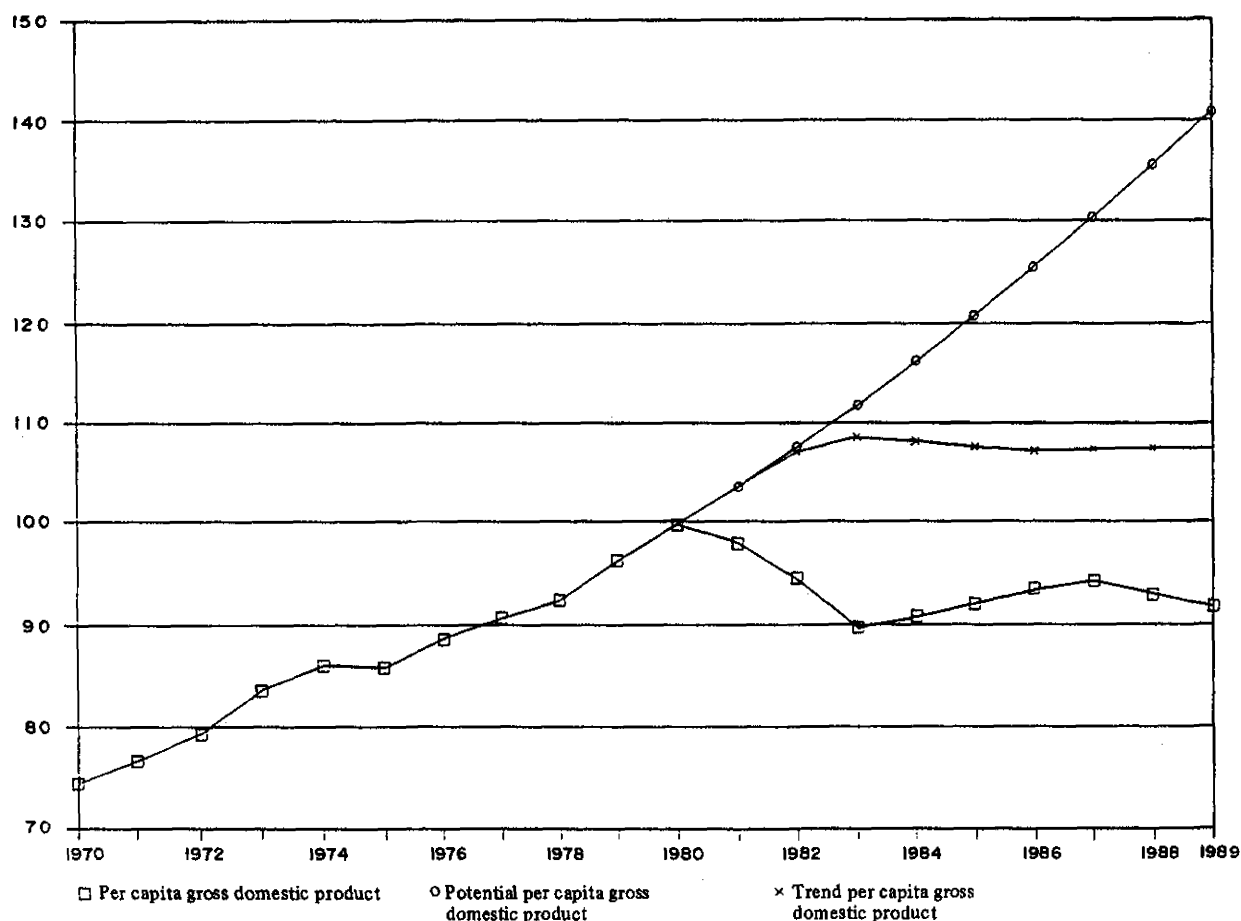
It is clear from this result that the policies

¹ According to data supplied by ECLAC in December 1990, the results for 1990 were even worse (ECLAC, 1990b).

Figure 1

**LATIN AMERICA: EVOLUTION OF GROSS DOMESTIC PRODUCT, POTENTIAL
GROSS DOMESTIC PRODUCT AND TREND GROSS DOMESTIC PRODUCT**

(Per capita)

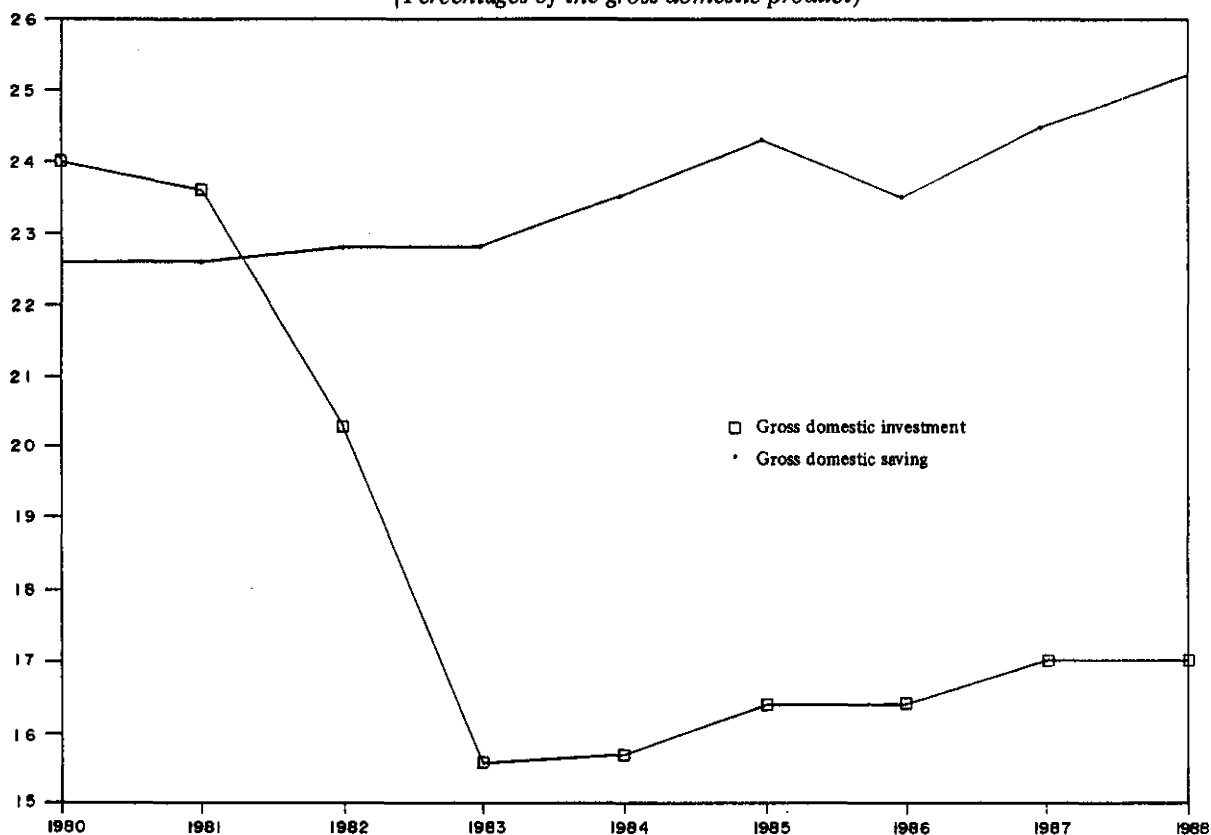


applied by the countries of the region in the 1980s did not manage to make full use of the available production capacity. Indeed, figure 1 shows that the potential per capita product also stagnated as from 1983, remaining far below the expectations based on the trends of the 1970s, shown by the upper line of the graph.

Why was there this stagnation in the per capita potential product? One possibility is that investment (as a percentage of GDP) went down because of the decline in per capita GDP. Indeed, the most generally accepted consumption functions assume that in the face of a transitory drop in income, consumers reduce their saving rather than their consumption. It would therefore be reasonable, given the lack of external financing, to expect a decline in saving and a consequent drop in investment, in the best traditions of classical and neoclassical analysis.

There is also another possibility: that investment went down in line with the disappearance of opportunities for profitably expanding production capacity. The drop in the product leads to a deterioration in investment opportunities because it reduces the marginal productivity of capital: that is to say, for a given interest rate the desirable stock of capital goes down and there is consequently a reduction in net investment. As, however, the interest rate went up, achieving a balance in the demand for investments called for a further drop in net investment in order to equalize the real rate of interest and the net yield on investments. Figure 2 shows the relation between saving and investment and the gross domestic product, from 1980 to 1989. It can clearly be seen that saving continued to increase during the 1980s as a percentage of the gross domestic product (at given terms of trade), and that in

Figure 2
LATIN AMERICA: SAVING AND INVESTMENT
(Percentages of the gross domestic product)



1988 it stood at the highest proportion of the whole period: over 25%. In other words, in 1988 the countries of the region as a whole reduced their consumption more than at any other time during the period under consideration. However, investment had fallen to a very low level of less than 16% of GDP in 1983, and its recovery was only modest, so that by the end of the period it had only reached a level of around 17% per year. In this respect, it may be recalled that previously, in order to attain a steady GDP growth rate of around 5% per year, it was necessary to invest around 24% of the product annually.

The surplus of saving over investment during the 1980s is shown in table 1. It can be seen from this that net payments of interest and profits abroad and the effects of the deterioration in the terms of trade, less external saving, come to an amount substantially equal to that surplus: in 1988, each of these two factors accounted for around 50% of the difference between saving and investment.

The magnitude of the effect of the deterioration in the terms of trade comes as something of a surprise, since most analysts attribute the whole of the decline in per capita GDP to the debt crisis, domestic policies or a combination of the two (Corbo and de Melo, 1987). If we look at the evolution of the terms of trade, however, most of the doubts are dispelled. Figure 3 shows the terms of trade for the non-oil-exporting Latin American countries between 1930 and 1989. It shows a slight negative tendency for the period as a whole but also reveals that in the 1980s the terms of trade dropped to levels as low as or even lower than those registered during the great crisis of the 1930s. If the oil-exporting countries are included (see figure 4), the results improve a little but the general conclusion remains the same. Although the loss due to the deterioration in the terms of trade cannot be allocated exclusively to consumption and saving, there can be no doubt that an improvement in these terms would increase the resources available for saving

Table 1
 LATIN AMERICA: ORIGIN, COMPOSITION AND FINANCING OF
 GROSS DOMESTIC INVESTMENT^a, 1980-1989
 (As a percentage of the gross domestic product)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 ^b
Gross domestic investment	24.0	23.6	20.3	15.6	15.7	16.4	16.4	17.0	17.0	16.3
Gross domestic saving	22.6	22.6	22.8	22.8	23.5	24.3	23.5	24.5	25.2	24.8
Net factor service income	-2.7	-3.9	-5.5	-5.3	-5.5	-5.1	-4.6	-4.1	-4.2	-4.3
Terms-of-trade effect ^c	0.1	-0.7	-2.7	-3.0	-2.4	-3.1	-4.6	-4.8	-5.3	-4.9
Gross national saving	19.9	18.1	14.7	14.6	15.6	16.1	14.2	15.6	15.7	15.6
External saving	4.1	5.5	5.6	1.0	0.1	0.4	2.2	1.4	1.2	0.7

Source: ECLAC, on the basis of official data.

^a At market prices, in constant 1980 dollars at the adjusted exchange rate.

^b Preliminary figures.

^c Includes unrequited private transfer payments.

without adversely affecting consumption to any significant degree.

It is not clear whether this behaviour in the terms of trade is a change in a long-term trend which had previously not displayed major variations, in which case there would be ample justification for a suggestion that there should be a change in strategies of production, or whether it is simply another transitory period of "leanfleshed kine". Whatever the answer to this question, figures 3 and 4 also show that both the positive and negative movements in the terms of trade tend to be grouped in long cycles. This fact, in itself, points to the need to change the structure of production so that the economies of the region are less vulnerable to such movements.

If the recent evolution of the terms of trade of the Asian economies and those of Latin America are compared, then it is seen that the developments have clearly been unfavourable for the latter. This evolution is closely related with the structure of exports, since it adversely affects exporters of primary commodities and favours exporters of manufactures (table 2). Thus, while in 1988 the developing countries which export manufactures registered a terms-of-trade index of 103 (1980=100), for those which exported

primary commodities the index was only 83 (IMF, 1988).

In this respect, it may be concluded that the production capacity (in the terms in which it is defined here) stagnated from 1983 onwards because of two basic external factors: the debt crisis and the deterioration in the terms of trade. These factors may also be interrelated: the simultaneous efforts of a number of countries to export similar products in view of the debt crisis may have had some influence on the decline in export prices, which has taken place even though the world economy has registered the longest period of growth in its recent history. I already made this comment some six years or so ago, at a conference on the occasion of the fiftieth anniversary of the Central Bank of El Salvador. Empirical research supports this assertion (Schmidt-Hebbel and Montt, 1989). This means that if several countries simultaneously carry out structural reforms aimed at expanding their exports, this may actually turn out to be counterproductive, as it will have adverse effects on export prices. Part of the deterioration in the terms of trade may be due precisely to such structural reforms and may therefore represent one of their costs.

Figure 3
LATIN AMERICAN NON-OIL-EXPORTING COUNTRIES: TERMS OF TRADE

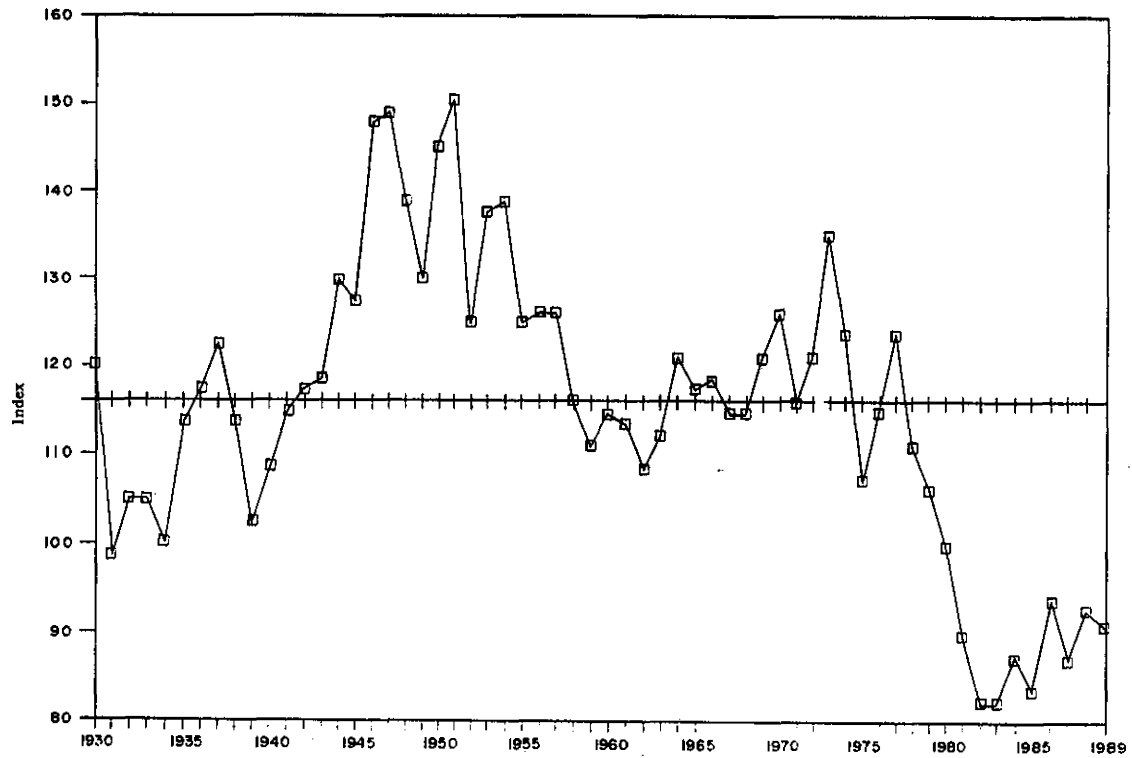


Figure 4
LATIN AMERICA: TERMS OF TRADE

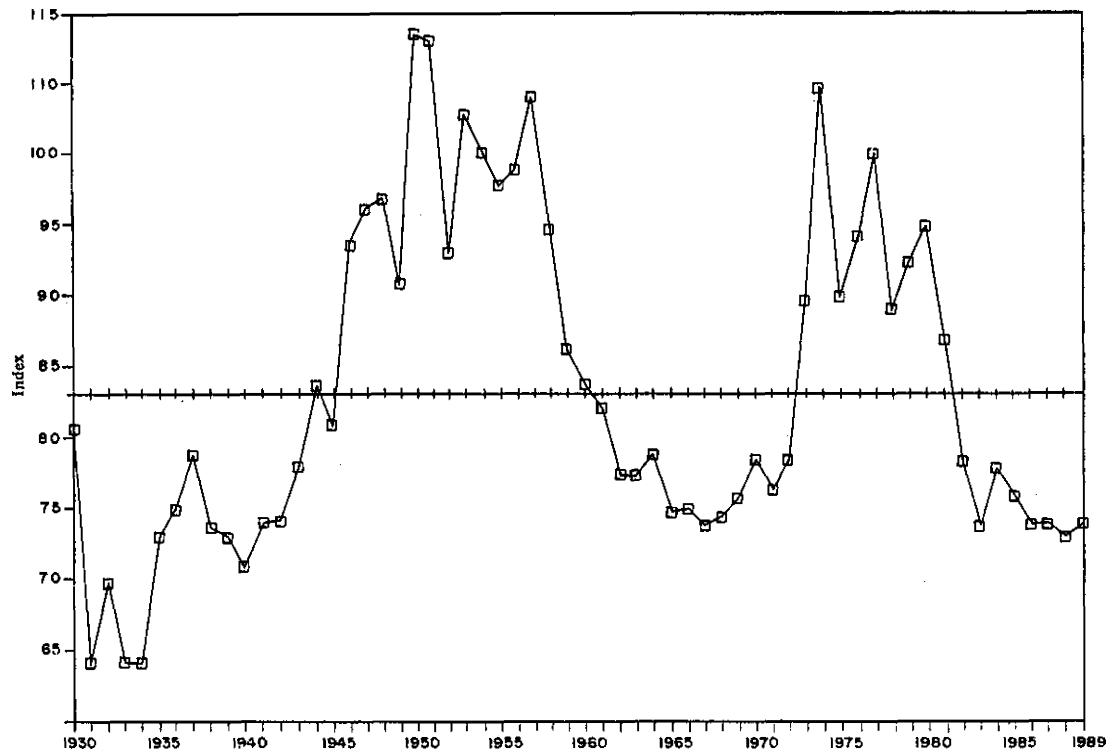


Table 2
ASIA AND LATIN AMERICA: COMPARATIVE EVOLUTION OF TERMS OF TRADE
(1980=100)

	1985	1987	Structure of exports in 1987 (Percentages of the total)		
			Primary commodities	Machinery and transport equipment	Other manufactures
Korea	106	105	7	33	59
Philippines	92	98	38	16	56
Malaysia	86	72	61	27	12
Taiwan	104	103	7	30	63
Argentina	90	81	69	6	25
Brazil	89	97	55	17	28
Bolivia	84	51	98	-	2
Colombia	98	70			
Chile	79	77	91	3	6
Ecuador	94	61	96	1	3
Guatemala	87	80	65	3	32
Honduras	93	83	88	-	12
Mexico	98	73	53	28	19
Peru	81	69	82	3	16
Venezuela	93	54	92	2	6

Source: World Bank, *World Development Report, 1989*, Washington, D.C., tables 14-16.

II

The decline in the rate of utilization of existing production capacity

In addition to the stagnation of potential production already referred to, it is necessary to take account of the difference which exists between potential production (the production capacity) and effective production (see figure 1). This difference may be due partly to the same factors responsible for the gap between the figures for saving and investment. When interest payments abroad cannot be financed with resources drawn from the private sector, governments are obliged to adopt inflationary policies which have negative effects on investment and, in the long run, on the level of activity. On the other hand, even if governments succeed in obtaining non-inflationary financing by increasing the domestic debt with the private sector, this causes a rise in interest rates and thus reduces domestic investment (an effect already taken into account earlier),

which also has the effect of reducing the rate of utilization of existing capacity.

I have no doubt, however, that the difference between potential and effective production is also influenced by other policies applied with excessive haste. Among these are: i) rapid reductions in import tariffs without appropriate corresponding management of the exchange rate; ii) rapid deregulation of the financial system without adequate supervision and in a context of policies of "crowding out", which causes interest rates to rise to incredibly high levels in real terms as well as leading to deterioration of the portfolios of the financial system; and iii) reductions in the size of the public sector which cause unemployment precisely at moments of depression for the economy as a whole.

Please do not misunderstand my arguments.

All the foregoing policies are necessary and appropriate in certain circumstances. However, it is necessary to take into account both the general economic context in which they are to be applied and the already mentioned fact that there are serious doubts regarding the sequence in which they should be applied.

An aspect which has not been given so much attention is the time needed for these and other policies to give results. The Chilean experience seems to indicate that quite long periods are needed for policies to achieve their objectives. Thus, for example, the diversification of Chilean agricultural exports really began in the mid-1960s, when a programme of expansion of fruit production was initiated and the agrarian reform

process was launched, creating a real market for agricultural land. The starting-point for the growth of forest industry exports, for its part, must be sought in the early 1960s, when an ambitious programme of subsidies for the planting of new afforested areas was established, leading to a rapid increase in the planting of pine trees. Tariff reductions, too, began in Chile in the second half of the 1960s: they were interrupted at the beginning of the 1970s but were resumed in the mid-1970s and reached the target levels fixed, after a temporary setback in the early 1980s. All this gives us a lesson: structural reforms take some time to give results and, without adequate financing, they may involve high costs in the short term.

III

The cost of recovering past growth rates in the 1990s

Some idea of the problems currently faced by the countries of Latin America can be gained from the fact that the difference between current saving and the investment needed to raise the gross domestic product by 5% per year amounts to some 7% or 8% of the latter, which, at the present levels of the product in the region, represents between US\$ 75 and US\$ 85 billion per year, assuming that the productivity of the economy remains unchanged.

Obviously, resources of this magnitude cannot come from a single source. It would be quite unrealistic to expect major increases in saving, and considerable amounts of new loans cannot be expected either. Consequently, it is necessary to adopt policies which attack the problem on several fronts at once.

The following examples may be useful for illustrating the kind of policies that the Latin American countries need in order to resume the pace of growth that they had in the 1970s: a) if the debt problem could be solved to the point of eliminating the outward transfer of resources from the region to the developed world (for example, through debt reduction or reduction of interest rates to around half their present levels),

this would make available for investment between US\$ 25 and US\$ 28 billion, which would, however, solve only one third of the total problem, and b) if the terms of trade returned to their 1980 level this would add a further US\$ 25 billion to the investment funds, covering another third of the overall problem. Such a solution will not emerge by magic, however: it will call for the opening up of foreign markets, rapid growth of the world economy, and suitable domestic policies for taking advantage for the opportunities created in the external sphere.

Thus, we see that even if it were possible to achieve both these advances, with all the difficulties involved in them, this would still only cover two-thirds of the difference between current investment and the level which is effectively needed. Generating the remaining third would be essentially a domestic responsibility calling for the application of policies to increase the efficiency of the national economies and the deployment of fresh efforts to obtain some external financing.

Likewise by way of example, an increase in productivity which raised the growth of the gross

domestic product by half a percentage point over the growth rates registered in the 1970s would reduce the investment needed in order to obtain growth of 5% per year by around US\$ 15 billion. Among the policies which can raise productivity are privatization, appropriate price policies, the elimination of economically unjustified subsidies, stimulation of technical innovation, etc.

If the above-mentioned policies on debt, trade and productivity fulfilled their objectives, this would provide some US\$ 65 to US\$ 70 billion for investment. The remaining amount needed (US\$ 10 to US\$ 15 billion) could be obtained from private and international organizations in the form of fresh indebtedness, since it only represents between 2.5% and 3% of the present debt and between 5% and 7% of the debt balance after its reduction. Naturally, the positive effects of the interaction between these three approaches

could, in themselves, greatly help in the solution of the problem.

Even if the financing needed for increasing investment were available, however, that would not necessarily mean that it would automatically be assigned for that particular purpose. It would still be necessary to apply policies to discourage private and public consumption, in order at least to maintain the present saving effort. This topic will not be pursued in the present paper.

The policies referred to above with regard to trade and productivity involve changing production patterns in the region. This issue was dealt with in detail in a recent ECLAC study entitled *Changing production patterns with social equity* (ECLAC, 1990), which was presented at the twenty-third session of the Economic Commission for Latin America and the Caribbean held in Caracas in May 1990.

IV

Equity and competitiveness

In the foregoing arguments, I have taken no account of considerations of equity, although everything indicates that the lower-income groups of the population have borne the brunt of the reduction of consumption. Household surveys indicate that there has been an increase in both the absolute and relative number of families living below the poverty line in Latin America. In 1980, the number of people living below that line was 136 million, while in 1986 it was over 170 million, and as a percentage of the population the figures rose from 41% to 43% between those years (ECLAC/UNDP, 1990). There was a pronounced increase in unemployment during this period, while the ratio between the real minimum wage and the per capita gross domestic product deteriorated still further, providing yet another indication of the unequal distribution of the burden.

It has not been possible in this case, either, to find an easy way of distinguishing which effects on equity and on social costs are due to the structural reforms, and which should be attributed to other events. It would seem, however, that the variations in the exchange rate and interest rates

which take place in an adverse external environment tend to lead to levels of real wages and employment lower than those compatible with a democratic system of solving conflicts. The life expectancy of the kind of competitiveness acquired through the reduction of real wages will necessarily be only short in a democratic system. Moreover, it will rapidly deteriorate in any case, due to changes in consumer preferences, in the growth rate of the world economy, or in technology, and still worse, it will encounter rapid reprisals in the main markets, as recent Latin American experiences seem to show.

Long-term competitiveness in external trade is a systemic matter which does not only involve exchange rate policies and actions by particular firms, but also the functioning of a whole system of reciprocal relations within the economy: high-way systems, ports, price and tax systems, domestic and external security, the financial system, the absorption of technology, education, and even the legal system and its capacity to settle disputes. It involves the degree of integration both of the different sectors of the economy and of countries and regions.

In conclusion, I would simply like to say that structural reforms aimed at increasing competitiveness within the world economy involve much more than tariff reductions, deregulation, price corrections and reduction of the size of the public sector. I would also like to stress that such reforms cannot be expected to give positive results within a short space of time. These aspects are important when considering

the cost of the reforms. The same is true of financing, since the reassignment of resources is financially onerous and involves lengthy periods of waiting for results and reducing consumption, depending on the terms and availability of financing. All this deserves the most serious consideration, which in my opinion it has not yet received in either bilateral or multilateral financial forums.

Appendix

PROCEDURE FOR CALCULATING THE GROSS DOMESTIC PRODUCT,
THE POTENTIAL GROSS DOMESTIC PRODUCT AND THE
(PER CAPITA) TREND GROSS DOMESTIC PRODUCT

The effective gross domestic product (GDP) is that which is obtained from the national accounts.

The potential gross domestic product (PGDP) is that which would have been registered from 1980 onwards with the net level of investment generated in that period but at the employment level of 1980 and the mean productivity of the period 1970-1980.

The trend gross domestic product (TGDP) is that which would have been registered from 1980 onwards if the levels of net investment and productivity of the 1975-1980 period and the level of employment of 1980 had been maintained.

Before the series for the PGDP and the TGDP could be generated, it was necessary to calculate the marginal product/capital ratio (MPCR), that is to say, the variation of the product per unit of variation in net fixed capital formation. This latter concept excludes investment in stocks.

Net domestic fixed capital formation (NDF) is obtained by deducting from gross domestic fixed capital formation (GDF) the rate of depreciation, which is assumed to be equal to 10% of GDP. Thus:

$$NDF_t = GDF_t - 0.1 * GDP_t$$

In order to obtain the marginal product/capital ratio (MPCR), a special iterative method using the following assumptions was employed:

- i) the Latin American economies operated at the same level of employment in the years 1970 and 1980, and
- ii) that ratio was constant for the period under review.

The method consists in obtaining a marginal capital/product ratio such that, starting from $GDP = PGDP$ for the year 1970 and considering the effective rate of net domestic fixed capital formation (NDF) for the 1970s, it gives a PGDP for the year 1980 which is equal to the effective GDP for the same year.

After the corresponding calculations have been made, the PGDP for the period 1981 onwards is projected. This is obtained by using the following formula:

$$PGDP_t = PGDP_{t-1}(1 + MPCR * k_t)$$

where: $k_t = (NDF/PGDP)_{t-1}$

The next step is the projection of the TGDP for the period 1981 onwards, using the following formula:

$$TGDP_t = TGDP_{t-1}(1 + MPCR * kT)$$

where: $kT = (1/6)[(NDF/GDP)_{1975} + \dots + (NDF/GDP)_{1980}]$

That is to say, kT is the average of the net investment rate for the period 1975 through 1980.

The per capita calculations were made on the basis of population figures for each year supplied by the Latin American Demographic Centre (CELADE). The figures for the product and investment were supplied by ECLAC.

Bibliography

- Blejer, Mario and Mohsin Khan (1984): Government policy and private investment in developing countries, *Staff Papers*, vol. 31, No. 2, Washington, D.C., International Monetary Fund (IMF), June.
- Blejer, Mario and Silvia Sagari (1988): Sequencing the liberalization of financial markets, *Finance and Development*, vol. 25, No. 1, Washington, D.C., International Monetary Fund (IMF), March.
- Corbo, Vittorio and Jaime de Melo (1987): Lessons from the Southern Cone policy reforms, *Research Observer*, vol. 2, No. 2, Washington, D.C., The World Bank, July.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1990a): *Changing production patterns with social equity*, LC/G.1601-P, Santiago, Chile, March. United Nations publication, Sales No.: E.90.II.G.6.
- _____ (1990b): *Preliminary overview of the Latin American and Caribbean economy, 1990*, LC/G.1646, Santiago, Chile, 19 December.
- ECLAC/UNDP (1990): Magnitud de la pobreza en América Latina en los años ochenta (LC/L.533), Santiago, Chile, May.
- Edwards, Sebastian (1987): Sequencing economic liberalization in developing countries, *Finance and Development*, vol. 24, No.1, Washington, D.C., International Monetary Fund (IMF), March.
- _____ (1988): La crisis de la deuda externa y las políticas de ajuste estructural en América Latina, *Colección Estudios CIEPLAN*, No. 23, Santiago, Chile, March.
- Feinberg, Richard (1986): An open letter to the World Bank's new President, *Between Two Worlds: the World Bank's Next Decade*, Richard Feinberg (ed.), U.S. Third World Policy Perspectives, No. 7, Washington, D.C., Overseas Development Council (ODC).
- Frenkel, Jacob (1982): The order of economic liberalization: discussion, *Economic Policy in a World of Change*, K. Brunner and A.H. Meltzer (eds.), New York, North Holland.
- Helleiner, Gerald (1986): Policy-based program lending: a look at the Bank's new role, *Between Two Worlds: the World Bank's Next Decade*, Richard Feinberg (ed.), U.S. Third World Policy Perspectives, No. 7, Washington, D.C., Overseas Development Council (ODC).
- IMF (International Monetary Fund) (1988): *World Economic Outlook*, Washington, D.C., April.
- Khan, Mohsin and Malcolm Knight (1985): Fund-supported adjustment programs and economic growth, *Occasional Papers*, No. 41, Washington, D.C., International Monetary Fund (IMF), November.
- Lal, Deepak (1987): The political economy of economic liberalization, *The World Bank Economic Review*, vol. 1, No. 2, Washington, D.C., The World Bank.
- Massad, Carlos and Nicolás Eyzaguirre (eds.) (1990): *Ahorro y formación de capital. Experiencias latinoamericanas*, Buenos Aires, Grupo Editor Latinoamericano.
- Massad, Carlos and Gunther Held (eds.) (1990): *Sistema financiero y asignación de recursos. Experiencias latinoamericanas y del Caribe*, Buenos Aires, Grupo Editor Latinoamericano.
- McKinnon, Ronald (1982): The order of economic liberalization: lessons from Chile and Argentina, *Economic Policy in a World of Change*, K. Brunner and A.H. Meltzer (eds.), New York, North Holland.
- Ram, Rati (1986): Government size and economic growth: a new framework and some evidence from cross-section and time-series data, *American Economic Review*, vol. 76, No. 1, Princeton, New Jersey, March.
- Ramos, Joseph and Nicolás Eyzaguirre (1989): *Restauración y mantenimiento de los equilibrios macroeconómicos básicos*, Economic Commission for Latin America and the Caribbean (ECLAC), Santiago, Chile, November, mimeo. (To be published in *El Trimestre Económico*, Mexico City).
- Schmidt-Hebbel, Klaus and Felipe Montt (1989): Impactos externos, devaluaciones y precios de materias primas, Nicolás Eyzaguirre and Mario Valdivia (eds.), *Políticas macroeconómicas y brecha externa: América Latina en los años ochenta* (LC/G.1532-P), Economic Commission for Latin America and the Caribbean (ECLAC), Santiago, Chile, March. United Nations publication, Sales No.: S.89.II.G.10.
- World Bank (1985): Structural adjustment lending: an evaluation of program design, World Bank Staff Working Papers, No. 735, Washington, D.C.
- Zahler, Roberto (1980): "Monetary and real repercussions of financial opening-up to the exterior. The case of Chile 1975-1978", *CEPAL Review*, No. 10 (E/CEPAL/G.1110), Economic Commission for Latin America and the Caribbean (ECLAC), Santiago, Chile, April. United Nations publication, Sales No.: E.80.II.G.2.

Latin America and the new finance and trade flows

*Robert Devlin and
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This article explores Latin America's prospects with regard to international finance and trade in the 1990s. It is concluded that the external environment will probably be unfavourable, although there will be some opportunities for supporting the region's structural adjustment processes.

The external financing prospects of most of the countries of the region are bleak, as they are still suffering from over-indebtedness, and the main financial flows will come initially from the reduction in the current value of the existing debt through concerted or unilateral actions. Nevertheless, the countries of the region can take advantage of certain limited credit and investment mechanisms ("niche financing") which will give them access to foreign capital in spite of their current over-indebtedness. The few countries which have begun to emerge from this latter situation will have a chance to re-enter the international capital markets.

As the access to external finance will probably be severely restricted, export promotion and the search for a better form of insertion in world trade will be indispensable elements in the economic policy of the 1990s. In view of recent world trade trends, a policy aimed at greater openness could be insufficient to improve this insertion on a stable basis, and it will be necessary to follow two additional lines of action: firstly, to strengthen Latin America's bargaining power with the other countries and regions, especially in view of the growing emergence of regional blocs, and secondly, to apply an active industrial policy aimed at incorporating technical progress and raising the skill level of the labour force in order to achieve the authentic competitiveness which will make it possible to increase the region's share in world trade and simultaneously raise the living standards of the population.

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Introduction**

The 1980s was a period of severe crisis for Latin America. Because of its extraordinary breadth, this crisis gave rise to challenges on many fronts at the same time. On the one hand, it gave rise to a tremendous financial crisis which made it necessary to engage in five rounds of external debt renegotiations with creditors and was reflected in the precarious state of the public sector accounts.¹ Furthermore, the serious economic crisis which then hit the region highlighted the need to rethink the development strategy which had prevailed since the 1930s. Consequently, there is now a generalized awareness of the need to effect thorough-going changes in the economies so that they can be modernized and become more competitive on the international level. The high cost of the economic crisis, together with the exclusive economic policies inherited from the past, also sparked off a serious social crisis.² Finally, the region also had to face up to a political crisis resulting from the authoritarian systems of the 1970s which are giving way in almost all the countries to a fragile and shaky transition to democracy.

The crisis affected so many aspects of national life that it has been extremely difficult to deal with. In the 1980s, there was deterioration in many areas, but also some progress. Nevertheless, the economic, political and social changes still needed continue to be of enormous magnitude and represent the real challenges of the 1990s. One of the most important conditioning factors of these changes, both in the area of commerce and finance, will be the external sector.

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¹ For a detailed account of the crisis and the rounds of renegotiations with creditors, see ECLAC, 1984, 1988, 1989c and 1990d.

² For an analysis of the economic crisis, with proposals for achieving a change in the production patterns of the region, see ECLAC, 1990e.

This article contains some reflections on the external environment which the Latin American countries will probably have to face in the 1990s

with regard to finance and trade, and it suggests some ways of taking advantage of the opportunities which may present themselves.

I

External finance

The prospects for securing finance in the 1990s are, generally speaking, gloomy. On the one hand, it is probable that Latin America's access to private international capital markets will remain relatively restricted on account of the crisis in the region and the persistent problems of the debt overhang. On the other hand, finance from bilateral and multilateral public agencies (which are generally not so strictly governed by private risk criteria) could be restricted by various factors: firstly, the serious fiscal constraints of the creditor countries are already giving rise to resistance to the granting of new development finance resources; secondly, the possibility that the new political priorities of certain industrialized countries may end up by diverting official resources from Latin America to Eastern Europe cannot be ruled out, and finally, there is a growing tendency to make the disbursement of official loans subject to conditions which the recipient countries frequently find difficult and burdensome. Consequently, it may reasonably be expected that the changes needed in the region in the 1990s will have to be carried out within the context of serious external finance constraints. Nevertheless, even in this context there are still opportunities for the Latin American countries to obtain larger amounts of finance in these years, and indeed, some countries of the region may already be on the threshold of a return to international financial markets.

1. Reducing the debt and its service

Since 1982, Latin America has made net transfers of resources to its foreign creditors amounting to almost US\$ 20 billion per year (table 1). This massive transfer (equivalent to 3% of the gross domestic product of the region) represents an extraordinary drain on resources which seriously

weakens Latin America's process of change. Consequently, as far as external finance is concerned, the first priority for many countries in the 1990s will be to reduce, or if possible eliminate, this negative resource transfer.³ In theory, there are two options for this purpose: the disbursement of new loans, or a reduction in the debt and its service. For most of the countries of the region, it is probably the latter option which offers the best possibilities for the coming years.

a) *Incentives for seeking a reduction of indebtedness*

Many Latin American countries are over-indebted, a fact which is recognized by the capital markets and is reflected in the big discounts at which the bank debt of these countries is traded on secondary markets (table 2). Without any doubt, the existence of an obvious state of over-indebtedness reduces the willingness of creditors to grant new credits.

The majority of creditor banks consider that they are over-exposed in Latin America, and it is only logical that they should therefore seek to reduce their commitments in countries whose economic situation is seen as being difficult. Furthermore, the United States, Japanese and British banks are in an extremely delicate financial situation because of the new requirements of the Basle Committee regarding minimum levels of capital and the large number of loans of dubious value which these banks have given to clients in their respective domestic markets (*Financial Times*, 1990a, b and c and *The Economist*, 1990).

One of the few reasons why a bank might

³ For fuller information on the negative effects of the outward resource transfer on the future performance of the Latin American economies, see ECLAC/SELA, 1989.

Table 1
LATIN AMERICA: NET CREDIT FLOWS^a
(Millions of dollars)

	1970-1973	1974-1979	1980-1982	1983-1987 ^b
Latin America	6 506	15 108	13 081	(19 819)
Oil-exporting countries	2 253	7 496	6 372	(9 851)
Bolivia	192	286	45	(123)
Ecuador	76	423	213	(167)
Mexico	1 306	3 397	4 834	(6 583)
Peru	250	658	(291)	33
Venezuela	429	2 732	1 571	(3 011)
Non-oil-exporting countries	4 253	7 612	6 709	(9 968)
Argentina	(380)	447	2 927	(3 309)
Brazil	3 856	5 335	(506)	(5 904)
Colombia	302	231	986	22
Costa Rica	78	243	118	(146)
Chile	128	349	1 331	(872)
El Salvador	61	145	193	(7)
Guatemala	46	168	240	(105)
Haiti	2	49	51	22
Honduras	72	172	117	51
Nicaragua	99	193	424	479
Paraguay	25	111	208	127
Dominican Republic	(11)	138	171	(199)
Uruguay	(25)	31	449	(127)

Source: ECLAC, Economic Development Division.

^a Net flows of short- and medium-terms loans, less interest.

^b Parentheses indicate a negative figure.

consider authorizing a fresh loan without any special guarantee would be to avoid default and the consequent losses that it would suffer due to the suspension of interest payments on the existing debt. This type of "involuntary" loan represents an effort by the banks to rescue the value of their existing loan portfolio. From another viewpoint, such an involuntary loan is equivalent to a disguised rescheduling of all or part of the interest payments due on the existing debt.⁴ Although the private banking system granted a significant number of involuntary loans in the 1980s, during the various rounds of rescheduling the Latin American debt, the frequency and size of these loans gradually diminished during the decade as the heavy accumulation of loan-loss

reserves effected by the international banking system increased its capacity to absorb debt service arrears (table 3). Today, even the biggest debtors—whose payment or default still has an impact on the balance sheets of the banks—face serious difficulties in obtaining new loans (ECLAC, 1989a). Indeed, the small amount of fresh finance obtained by the debtor countries on the bank market indicates that most of the banks, rather than authorizing new loans, prefer to admit to losses through the debt reduction options under the Brady Plan.

With regard to new or potential creditors, they can easily see when a country is over-indebted, and it is only natural that in such a case they do not want to get involved in the problem. These lenders will be reluctant to provide lines of credit unless they can find a special "niche" which gives them preferential access to the scarce foreign exchange resources of the country.

⁴ For an analysis of the reprogramming of the debt and the role of involuntary loans, see Devlin, 1989, chapter 5.

Table 2
 LATIN AMERICA AND THE CARIBBEAN: SECONDARY MARKET PRICES OF EXTERNAL DEBT PAPER
 (As a percentage of the nominal value)

	1986			1987			1988			1989			1990		
	January	June	December	January	June	December	January	June	December	January	June	December	January	June	October
Argentina	62	65	66	64	52	35	32	25	21	20	13	13	12	13	13.5
Bolivia	---	6	7	8	9	11	11	11	10	10	11	11	11	---	---
Brazil	75	74	74	72	62	46	46	51	41	37	31	22	25	24	22.8
Colombia	82	81	86	86	85	65	65	65	57	56	57	64	60	64	63.5
Costa Rica	---	48	35	35	36	15	15	11	12	13	14	17	18	---	---
Chile	65	67	67	68	70	61	61	60	56	60	61	59	62	65	74.5
Ecuador	68	64	65	65	50	37	35	27	13	13	12	14	14	16	18.1
Guatemala	---	52	60	61	67	77	57	---	---	---	---	---	---	---	---
Honduras	---	40	40	40	39	22	22	22	22	22	17	20	21	---	---
Jamaica	---	45	45	45	38	33	33	38	40	40	41	40	40	44	---
Mexico	69	59	56	57	57	51	50	51	43	40	40	36	37	45	42.7
Nicaragua	---	4	4	4	5	4	4	2	2	2	1	1	1	---	---
Panama	---	69	68	68	67	39	39	24	21	19	10	12	19	12	10.8
Peru	25	20	18	18	14	7	7	6	5	5	3	6	6	4	3.3
Dominican Republic	---	45	45	45	45	23	23	20	22	22	22	13	13	17	---
Uruguay	---	63	66	68	74	60	59	60	60	60	57	50	50	49	51.5
Venezuela	80	76	74	75	71	58	55	55	41	38	37	34	35	46	---
Average ^a	---	64.6	64.2	63.7	58.5	46.5	45.1	45.4	37.7	35.2	31.9	28.0	29.5	33.3	33.2

Source: United Nations Department of International Economic and Social Affairs, on the basis of offer prices compiled by Solomon Brothers, High Yield Department.

^a Weighted by the amount of bank debt.

Table 3
INTERNATIONAL BANKS:
ESTIMATED LOAN LOSS RESERVES ON THEIR
LOANS TO DEVELOPING COUNTRIES,
AS A PERCENTAGE OF TOTAL EXPOSURE
IN THOSE COUNTRIES^a
(Percentages)

France	41-52
(BNP)	(52)
(Crédit Lyonnais)	(46) ^b
(Société Générale)	(53)
(Banque Paribas)	(41) ^b
Germany	50-80
(Deutsche Bank)	(77)
(Dresdner)	(50)
Switzerland	80 ^c
United Kingdom	45-72
(Midland Bank)	(58)
(Barclays)	(48)
(Lloyds Bank)	(72)
(Standard Chartered)	(46)
(National Westminster)	(65)
Canada	45-70
(Royal Bank of Canada)	(70)
(Canadian Imperial)	(45) ^d
(Bank of Montreal)	(41) ^d
(Bank of Nova Scotia)	(45) ^d
Japan ^e	15
United States ^f	
Money centre banks	30-70
(Citicorp)	(30)
(Bank of America)	(32)
(Manufacturers Hanover)	(29)
(Chase Manhattan)	(39)
(Chemical Bank)	(33)
(Bankers Trust)	(70)
(J.P. Morgan)	(64)
(First Chicago)	(53)
(Bank of New York)	(-)
Super Regionals	30-75
(Security Pacific)	(30)
(Bank of Boston)	(75)

Source: ECLAC (1990a), p. 46.

^a November 1989.

^b December 1988.

^c September 1989.

^d June 1989.

^e Uniform for all Japanese banks. The Ministry of Finance of Japan has issued a guideline of a 25% reserve by March 1990.

^f December 1989.

Thus, in view of the serious over-indebtedness affecting most of the Latin American countries, it may be assumed that the flow of new credits will be very small, especially in the case of those coming from the private credit markets. Moreover, the recovery of general access to credit without special guarantees is by its very nature a slow process and can only begin when the financial circles perceive that the debt overhang has been overcome. In such circumstances, the over-indebted countries can maximize the discounted present value of the future flow of credit through formulas for the reduction of the existing debt and debt service.

Countries which do not have problems of over-indebtedness may also have good reasons for seeking a reduction in their debt. If the capital markets were efficient, it would not be in the interests of creditworthy countries to reduce their debt, as this would have a high opportunity cost: the discounted present value of the saving on debt service achieved through the mechanisms for the reduction of external commitments could well be less than the present value of the future flow of foreign capital lost through the negative reaction of creditors to a drop in the value of the financial assets involved.

However, the capital markets to which Latin America has access are apparently not so efficient, and this is reflected in the difficulty creditors have experienced in discriminating between the different countries of the region from the point of view of their creditworthiness. Thus, even clearly creditworthy Latin American countries such as Colombia have encountered tremendous resistance to their requests for fresh credits.⁵ Apparently, many creditors make the mistake of seeing every country in the region—even if it is creditworthy—as just one more economy in a region in crisis. Because of this failure in the market's risk evaluation mechanisms, the creditworthy countries become victims of the negative externalities generated by the systemic financial crisis suffered by the region; in these circumstances, they could be led to behave as though they were insolvent too and request a

⁵ This situation, which is linked with the negative externalities that tend to occur in systemic financial crises, was also observed in Latin America during the Great Depression of the 1930s. See ECLAC, 1965, chapters 1 and 2.

reduction in their debt. It would appear that investors are incorporating this perverse phenomenon in their calculations of the value of the debt, since even the bank loans of the apparently creditworthy Latin American countries are circulating at big discounts in secondary markets.

b) *Consensual debt reduction formulas*

As already noted, the capital markets are apparently not well placed to grant fresh finance to the region on a global basis.⁶ The problem of overindebtedness which is largely behind this situation is systemic in both its origins and in the solutions needed for it: the overexpansion of external commitments arose from the interaction of the policies of the debtor countries, the private banks and the industrialized countries (ECLAC, 1990a). Ultimately, it was the market, and not a particular banker or borrower, which went wrong in a particular institutional context. Moreover, the overindebtedness not only adversely affects the relations between the debtors and the banks involved but also hinders the activities of economic agents who are not financially overextended: hence, the social or public nature of the problem calls for public action to share the costs of a solution among debtors, creditors and, if necessary, the international public sector in general.

Although the systemic nature of the problem was visible from the beginning of the crisis,⁷ in its first years it was treated in official circles as exclusively a private matter which should be solved between creditors and debtors, with the least possible participation of the international public sector. Even when it became evident that the credit market had collapsed around Latin America, heavy emphasis continued to be placed on the need to respect private market criteria, ostensibly in order to restore the access of the debtor countries to fresh loans. Indeed, the possibility of obtaining fresh finance was usually used to justify the design of strategies whose aim was almost exclusively to avoid losses for the private banking system (Devlin, 1989, chapter 5). The other side of the coin was a massive net

transfer of resources from the debtor to the creditor countries.

The truth is that in view of the systemic nature of the debt overhang problem, a reduction in the debt or its service should have been sought at the beginning of the crisis. This approach, which is quite widely used to solve a systemic problem in the domestic credit markets of the industrialized countries,⁸ is the only way of promoting an efficient adjustment for all the parties in the system and thus equitably sharing the costs of a solution. Unfortunately, it was only in 1989, with the appearance of the Brady Plan, that this broader public approach gained currency as a response to the problem of the Latin American debt overhang.

i) *The Brady Plan.* While it is true that incentives for reducing the debt have existed for many years, thanks to the Brady Plan the debtor countries can now in principle pursue a debt reduction policy with the full support of the international community. The new plan earmarks financial and institutional resources of the international public sector for the process of reducing the bank debt. Four debt reduction agreements have already been finalized (for Mexico, the Philippines, Costa Rica and Venezuela), financed with a total of over US\$8 billion in loans from the World Bank, the International Monetary Fund and various individual governments (especially Japan).⁹ In addition, Uruguay and Morocco have signed agreements in principle with their creditor banks.

The existence of the Brady Plan gives the Latin American countries a chance to reduce their debt service payments (and the negative resource transfer) on a consensual and non-conflictive basis. Undoubtedly, in the 1990s more countries in the region will seriously explore the new opportunities available in this field. At the same time, however, it should be noted that the Brady Plan presents some serious problems which could cause difficulties for the debtor countries.

The Brady Plan is basically a voluntary

⁶ However, there are opportunities for fresh finance which are examined below.

⁷ ECLAC recognized this from the beginning: see ECLAC, 1982.

⁸ As in the case of the rescue measures in favour of the Chrysler Corporation and the City of New York, for example. See ECLAC, 1990a, table 4.

⁹ For details of the way the Brady Plan operates, see ECLAC, 1990a.

scheme whereby the private bank debt is repurchased, directly or indirectly, at a discount.¹⁰ The amount of reduction of the debt is thus closely conditioned by the price at which the debt is traded on the secondary market and by the finance available for carrying out the repurchase. The agreements reached so far under the Brady Plan have been the subject of intense debate, since a significant number of analysts consider that the net debt reductions thus achieved, and the effect that these will have on the foreign exchange flow, will be really quite limited. There are three main reasons why these results may be unsatisfactory: firstly, an insufficient supply of public finance to carry out the bank debt repurchase operations; secondly, insufficient co-ordination of the banks by the public agencies, thus permitting the banks to evade options that would effectively reduce the debt to levels that could be reasonably serviced, and thirdly, the absence of specific measures for tackling the problem of serving the official debt, which represents a heavy burden in many countries.

In view of these three serious shortcomings, it is possible that the Brady Plan will not serve to eliminate the debt overhang problem completely, so that many Latin American countries may only achieve a partial reduction of their excessive external commitments. Unfortunately, such a partial debt reduction scheme could ultimately bring more problems than solutions.¹¹

The benefits of the debt reduction are transmitted to the debtor country through two main channels: on the one hand, the cash flow improvement regarding foreign exchange and the fiscal accounts due to the reduction in the debt service; and on the other hand, the reduction in the private sector risk premium. There is thus, in principle, a greater possibility of achieving an effective structural adjustment and servicing the debt.

¹⁰ In a voluntary debt reduction scheme, the conversion of the debt into bonds sold at a discount, as illustrated by the agreement signed by Mexico, is an "indirect" debt repurchase operation. For an analysis of the equivalence between direct repurchase and conversion into bonds, see Dooley, 1988, pp. 714-722.

¹¹ ECLAC has estimated that with the present level of public financing (US\$ 30 to US\$ 35 billion) the Brady Plan could reduce the net indebtedness of the region by only between 13% and 15%. See ECLAC, 1990a, pp. 107-108.

If the debt reduction operation does not clearly eliminate the overindebtedness, however, its benefits for the debtor country would seem to be rather ambiguous. Firstly, the cash flow effect will only be small compared with the finance needed to support a socially efficient adjustment, that is to say, one that also permits growth. Furthermore, it is well known that the partial repurchase of the excess debt may turn out to be a bad deal for the debtor country, since the marginal value of the debt thus retired may be less than the price paid for it.¹² Secondly, the unconditional defenders of the Brady Plan usually implicitly assume that there is a direct and continuous relationship between the debt reduction and the reduction in the private sector risk premium: thus, for example, a 30% reduction in overindebtedness would bring about a similar decline in the adverse expectations of investors. If we take into account the existence of barriers to information, the entrenched adverse expectations after eight years of crisis, and the interdependence of investors in regard to the taking of decisions, however, the most likely outcome is that in practice this relationship will not function in this way. This means that the reduction in the debt must pass a certain critical threshold before it brings about a significant decline in the medium-term private sector risk premium.

Thus, in the event that the Brady Plan only permits a partial reduction in the debt overhang, its benefits will generally speaking be ambiguous. For this reason, the participation of the debtor

¹² When the probability that a Latin American country will pay its debts is uncertain, the discount registered on that country's debt in the secondary markets will reflect this uncertainty. Let us assume that in an optimistic scenario the country can pay 100% of the debt, whereas in a pessimistic one it can only pay 25%. Let us also suppose that there is a one in four probability that it will comply with the optimistic scenario and a three in four probability that it will act according to the pessimistic one. In this case, the price of US\$ 1 of debt on the secondary market will be 44 US cents, that is to say, the weighted average of the two scenarios. In the repurchase operation, the country will pay at least 44 US cents per dollar of debt, even though the marginal value of one rescued dollar for the debtor will only be 25 US cents, because of the low probability (25%) that the country will honour all its debt service commitments. Only if the overindebtedness problem is definitively eliminated can this dilemma be overcome. For a more detailed analysis of this problem, see Bülow and Rogoff, pp. 675-704.

countries in the plan could simply be an act of faith. This conclusion has real repercussions for the Latin American countries, since the Brady Plan urges debtors to use part of their scarce international reserves, the balance-of-payments support loans from the World Bank and the International Monetary Fund and the receipts from bilateral aid to finance the debt reduction operations. From the point of view of the alternative use that could be made of scarce foreign exchange resources, however, it is possible that the direct allocation of such resources to their original purpose (that is to say, balance-of-payments financing and investment projects) would give a greater yield than the ambiguous benefits provided by the partial reduction of the debt overhang.

Another drawback in a partial reduction of the debt overhang emerges when there is conversion of existing commitments into bonds, as an instrument for the repurchase of the debt on the secondary market. In this situation, regardless of the size of the discount, the debtor country could end up facing still greater rigidity in its future debt management. This is because bonds (unlike loans) are difficult to reschedule and to subject to the previously mentioned policy of involuntary loans. Thus, when the discount is not enough to eliminate the excess external liabilities, there is an even greater chance that subsequent payment problems will be solved through a formal default. Since bond holders are traditionally ill-disposed to put up with such default, the delinquent debtor country could eventually find itself swamped with lawsuits brought by discontented creditors.

These difficulties show that the Brady Plan—after having created expectations that it would offer a consensual mechanism for putting an end to the debt overhang problem in Latin America—will not necessarily be a panacea for the problem of the negative resource transfer. Furthermore, the Plan creates fresh dilemmas for the debtor countries (with regard to the best way of using their scarce official loans) and for the multilateral agencies, which are now under pressure to extend their loans to activities with a dubious return. In contrast, the banks have better prospects of ending up in a relatively more favourable position, since if they wish they can sell off their

loans en masse and thus exit from the problems of Latin America.

In order to overcome these difficulties and increase its efficiency as a debt reduction vehicle and economic reactivation instrument, the Brady Plan would need, *inter alia*, to do the following: firstly, to treble to around US\$ 90 billion the public resources available for financing the repurchase of bank paper on the secondary market;¹³ secondly, to strengthen the International Monetary Fund's capacity to give official approval to the build-up of arrears by countries whose processes of adjustment (with growth) are being hindered by lack of co-operation from the private banks on debt reduction, and thirdly, to permit a sharp reduction in bilateral debt, together with the creation of new mechanisms to relieve the burden of multilateral obligations.¹⁴

These and other reforms could improve the efficiency of the Brady Plan and make its benefits clearer to the debtor countries. Unfortunately, the prospects for the Plan being strengthened in this way are not very bright. Faced as they are with their own fiscal imbalances, the governments of most of the creditor countries have shown themselves to be reluctant to finance large-scale international initiatives. Likewise, the possibility of creditor governments and multilateral finance agencies putting strong and sustained official pressure on the banks depends on a complicated set of interests and political forces which are indeed very difficult to control.

Consequently, in this early part of the 1990s the road towards a concerted and effective solution to the debt overhang problem still seems to be full of obstacles, and the Latin American countries will have to travel along that road with the greatest caution, since in some circumstances the

¹³ With regard to the objective of rapidly eliminating the debt overhang, the alternative to more public financing for debt reduction would be an official scheme based on full coercion: for example, new legislation in the creditor countries obliging the commercial banks to adjust the debt to levels which the debtor countries can service. However, the possibility that such a conflictive scheme will be adopted in countries such as those of the North, where decisions are usually taken by consensus, is even more remote than the introduction of a well financed voluntary scheme.

¹⁴ See these and other proposals for improving the operation of the Brady Plan in ECLAC, 1990a, Chapter IV and Rosenthal, 1990, pp. 17-20.

Table 4
 CONVERSION OF EXTERNAL DEBT TO EQUITY
 OR LOCAL CURRENCY
 (Millions of dollars)

	1985	1986	1987	1988	1989	1990
Conversion of debt to equity	497	815	3 167	6 198	4 500	8 853
Conversion of debt to local currency	156	438	796	1 639	2 238	1 244

Source: Michael Bouchet, *Transnational banks and external indebtedness of developing countries*, New York, United Nations Centre on Transnational Corporations (CTC), November 1990, mimeo.

options offered by the official debt reduction scheme could have undesirable repercussions on their development financing.

ii) *Debt/equity swaps*. For several years now, the conversion of bank debt into equity has been another consensual manner of reducing external liabilities. The total amount of these swaps grew from US\$ 500 million in 1985 to US\$ 9 billion in 1990 (table 4). The commercial banks have actively promoted such transactions, because they allow them to get out of the debt problem with lower discounts than those being registered in secondary market operations. On the other hand, the debtor countries have often expressed reservations about this form of conversion, mentioning among other aspects the subsidy that this represents for foreign investors, its impact on the money supply and domestic interest rates, and the question of sovereignty.¹⁵

It is quite true that the adverse effects of debt/equity swaps justify some reservations about the use of this approach as a general mechanism for the reduction of external obligations, but it may nevertheless offer real opportunities if applied selectively in order to achieve well-defined investment aims. For example, there are cases where it may be necessary to give subsidies in order to attract certain kinds of foreign investments; in these circumstances, a debt conversion operation may well be an appropriate channel for giving such a subsidy. Likewise, if it is desired

to privatize some public enterprises rapidly, then debt conversion programmes may be effective means for attracting the participation of foreign banks and other investors. The repatriation of flight capital could also be promoted through programmes of this type.

Since the banks tend to take advantage of national debt/equity swap schemes, and since these programmes lead to rises in the price of debt paper on the secondary markets, the initiation of a conversion plan should be conditional upon the prior approval of a global definitive agreement for the reduction of the debt. This would eliminate the *ad hoc* nature of debt/equity swap programmes and make them part of a global solution calling for greater sacrifices from the private banking system.

c) *Unilateral debt reduction formulas*

In view of the shortcomings of the Brady Plan and the uncertain prospects that a true concerted public solution to the debt problem will emerge, unilateral restriction of external debt service commitments cannot be ruled out as a temporary second-best financing measure for the debtor countries. Indeed, the majority of the countries of the region have applied a partial or total restriction of their debt service commitments to commercial banks and other creditors.¹⁶ Thus, for most of the Latin American countries

¹⁵ For an analysis of some of these problems, see Lahera, 1987 and Ffrench-Davis, 1987.

¹⁶ Latin America's arrears, solely in respect of interest payments on the debt, exceeded US\$ 18 billion in 1989, and the figure may have reached US\$ 25 billion by mid-1990.

the question is not whether they should restrict such payments but only how and for how long.

This is a tricky subject, and the benefits and costs of such a restriction will obviously depend on the specific circumstances of each country. Experience indicates that certain considerations should be taken into account if it is decided to formulate a national strategy in this respect, however.¹⁷

To begin with, the main motive for embarking on a restriction of payments is the lack of consensual options for dealing with excessive debt service payments and their destabilizing effects. Obviously, servicing an overvalued debt greatly prejudices the execution of programmes of structural change in the Latin American economies. In view of the operational problems of the Brady Plan, mentioned earlier, a unilateral restriction of payments may sometimes be the only way of securing the additional finance needed to support efficient programmes of adjustment and economic change.¹⁸

Secondly, a payments restriction may be the first step towards the negotiation of a definitive debt reduction agreement. It is worth remembering that it is difficult to negotiate a substantial reduction in the debt when the debtor country is punctually servicing its contractual obligations. Paradoxical though this may seem, this conclusion reflects the fact that the banks always compare any agreement, no matter how modest it may be, with the *status quo*. If the debt is being serviced punctually, then obviously they are going to prefer the *status quo*. In contrast, restricting the debt service indicates the physical incapacity of the debtor to service his debt. In such circumstances, both parties know that time may be on the side of the debtor country, because any stagnation of the negotiations maintains the *status quo* and thus maximizes the debt service relief. In contrast, any formal debt reduction agree-

ment will mean an increase in the service payments compared with the *status quo*, thus improving the situation of the banks even though the formal reduction in the debt may be quite substantial.

Thirdly, the benefits that may be derived from a payments restriction will depend mainly on the way internal factors evolve. In order for the restriction to become an effective source of additional external finance and a basis for a possible definitive debt reduction agreement, the creditors must be made to perceive that this unilateral policy is viable and sustainable. Only then will they have an incentive to begin serious negotiations seeking a real solution for the debt overhang. The stability of the policy adopted with regard to the excessive service commitments on the old debt is also an important factor for minimizing the negative effects of the debt overhang on the behaviour of private investors: in other words, the adoption of clear and stable rules on the way the servicing of the old debt is to be handled may make it easier for new investors to identify "niches" offering them opportunities in the economy of the debtor country.

Still at the domestic level, the efficiency of the payments restriction will depend to a very large extent on the existence of a coherent economic programme aimed at securing effective structural adjustment. The coherence of the economic programme gives the payments restriction legitimacy, since it creates an objective basis for determining the medium and long-term payments capacity of the country, which will serve as a basis for the negotiations with the banks. It also inspires in the national economic agents a certain respect for the decisions of the economic team and generates a perception that the payments restriction forms part of a broader national initiative to improve the performance of the economy, with corresponding opportunities for obtaining profits. It has also been observed that foreign creditors and international agencies have shown some reluctance to level serious threats at a country's payments restriction when it has been applying a respectable economic programme. In contrast, experience has shown that if the restriction is not backed up by a serious and sustainable economic programme, it rapidly loses prestige and may involve very high political and economic costs, possibly ending up being

¹⁷ ECLAC has made some studies on the experience of the countries with regard to payments restrictions. For some preliminary background see ECLAC, 1990a, chapter V, and Altimir and Devlin (in the press).

¹⁸ It is interesting to note that against the background of the rather discouraging results of most of the adjustment programmes in Latin America, two of the cases considered to be "successful" (Costa Rica and Bolivia) used a moratorium to support their adjustment and stabilization programmes.

totally discredited as a means of neutralizing the debt overhang.

If the payments restriction is to be efficient, it also calls for careful political management. Fundamentally, the orderly management of the restriction depends to a large extent on the emergence of a national consensus which supports this measure as a reasonable temporary option in view of the limited alternatives offered by the creditors. Such a consensus does not arise automatically, but requires a political strategy and an information campaign directed at the national groups with the greatest influence on public opinion.

As well as establishing a firm domestic base to support the payments restriction, it is necessary to take precautions at the external level also. It may be useful to take measures designed to have a conciliatory effect on creditors, by presenting the restriction with the least possible fuss, for example, and emphasizing that it is a special measure forced upon the country by the unbearable burden of the resource transfer. Efforts may also be made to keep open the lines of communication with creditors by putting forward constructive formulas for overcoming the problem of the excessive nominal value of the debt. Finally, as a sign of goodwill, consideration may be given to the partial payment of the debt service commitments on the contractual debt, but only in amounts in keeping with the country's payment capacity and the requirements of its economic programme. Furthermore, these symbolic payments should be on the current debt service and not in respect of accumulated arrears, since the latter are an integral part of the debt overhang problem and their solution must therefore await a definitive global agreement with creditors. In certain cases, it might even be useful to announce unilaterally—but always in a conciliatory manner—a payment plan benefitting certain creditors (it could be announced, for example, that X% of exports or of the gross domestic product will be devoted to debt service), in order to stabilize the expectations of the private agents with regard to access to foreign exchange.¹⁹

¹⁹ The only country in Latin America which has carried out a formal unilateral payments plan is Peru. Although the restriction functioned relatively well to start with, its benefits were largely dissipated because of serious problems in the

It is normal practice to exclude debts with multilateral finance agencies from payments restrictions. These agencies are not bound by the same risk evaluation criteria as the private capital markets, and consequently they form a potentially flexible source of finance; furthermore, running into arrears with multilateral credit institutions could be interpreted by third parties as an act of desperation which would discredit the whole management of the adjustment and transformation process. It is also worth taking measures to avoid any possible interruption in access to short-term lines of trade credit. Finally, still at the external level, it might be useful to take measures to protect the international reserves from possible hostile action by some private creditors (ECLAC, 1990a, chapter V).

Fourthly, in a well-ordered unilateral strategy it is necessary to take account of the time horizon of the restriction. Unilaterally limiting debt service is, by definition, a temporary tactic. Running up arrears may relieve one of the main negative effects of the debt overhang (that affecting cash flow), but not necessarily the other (the private sector risk premium). Consequently, it is desirable that the country should reach a *definitive* debt reduction agreement as soon as possible. This may take some time, however, especially if the debtor country is small and of little relative importance to the banking system.²⁰ For example, Costa Rica was in arrears for five years before finally reaching agreement with the banks in May 1990, while Bolivia has been in arrears with the banks since 1982: despite two big repurchase operations of its bank debt on the secondary market (at a price of 11 US cents per dollar), one-third of its commitments are still currently in arrears, awaiting some kind of agreement. The long-drawn-out nature of the banks' response is another reason why the debtor country should take care to ensure that the payments restriction is orderly and sustainable and forms part of a successful economic programme in the areas of adjustment and stabilization.

country's economic programme. For an analysis of Peru's unilateral payments plan, see Figueroa, in Altimir and Devlin (editors) (in the press).

²⁰ The banks often hold up agreement with a small debtor in order to avoid setting precedents which could later become general in the negotiations with big debtors.

Finally, it may be noted that the Brady Plan has created circumstances whereby the IMF may become a potential ally of countries with payments problems, for the Fund now has general authorization to disburse loans even though the recipient country has not reached prior agreement with the private banking system to cover the servicing of its debt. Thus, during 1989-1990 this agency disbursed loans to various countries which had not signed any agreement with their creditors, including some which even registered serious arrears in their debt service. The banking system received these disbursements with alarm, since they seriously weakened its own bargaining power.

While this new policy of the IMF is potentially valuable for the debtor countries, it must nevertheless be noted that its application is still very uncertain and there are apparently serious disagreements among the Directors of the Fund regarding the role which that institution should play in debt reduction processes. The regrettable vacillation of the Fund and of other multilateral agencies in the face of the Brazilian moratorium in 1990 is a good example of how these institutions may be subject to changing pressures from the industrialized countries over debt service arrears (*Financial Times*, 1990d).

Consequently, before entering into a standby credit agreement or expanded facility agreement with the IMF, debtor countries should negotiate with that agency the total amount of debt service which their economic programme can support in the medium term, also incorporating into the calculation their needs as regards investment and growth. The resulting estimate of their payment capacity should be a firm and explicit parameter of the structural adjustment programme with the Fund, subject to modification only after indisputable proof has been given of the existence of a surplus of foreign exchange and fiscal resources in the medium term.²¹ Indeed, it would be useful if the Fund undertook to defend that

²¹ For example, the possibility of a readjustment of the level of payments after the fifth year of a structural adjustment programme could be considered, provided that the actual situation of the country justified it. Similarly, the capture clauses should be even-handed and should provide for a reduction in the debt service if there is a drop in the country's payment capacity.

estimate of payment capacity so that it could become the basis for negotiation with the banks over the debt reduction. Finally, the Fund should accept selective arrears in the debt service commitments of the countries to the banks when the latter are not willing to respect the estimates of the debtor country's payment capacity.

2. *Obtaining fresh financing*

As already noted, the systemic nature of the external debt problem has meant that both credit-worthy debtors and insolvent countries of the region have faced equal difficulties in obtaining fresh resources on the international capital markets. Unless there is a drastic change in the external environment, this restriction will probably continue to be severe for much of the 1990s. Even so, however, there will be some opportunities for obtaining resources abroad.

a) *The private markets*

i) *Credit financing.* At the beginning of this article, reference was made to the difficulties that the countries are likely to face in gaining access to external financing. In effect, it is not reasonable to expect an abundant flow of private capital to a region which is clearly overindebted. Nevertheless, there will be circumstances in which financing will be available for specific enterprises and projects. There will be foreign investors willing to take above-average risks if they are compensated with higher yields. At the same time, many of them will look for investment opportunities which permit them to insulate themselves as far as possible from sovereign and transfer risks. The financing of this type of investments can be termed "niche financing" (see some concrete examples of this in the appendix).

Transactions like these are already being carried out relatively frequently in Latin America.²² In this type of financing, the loans enjoy special (direct or indirect) collateral which enables the creditor to protect himself from the risk globally associated with the country. This special guaran-

²² For a more detailed description of these transactions see *Business Latin America*, 2 April 1990, p. 102; *América Económica*, 1990, pp. 10-16; *The Economist*, 2 June 1990, p. 83; OECD, *Financial Market Trends* (Paris) (numbers corresponding to 1990), and *Latin Finance*, June 1990, p. 24.

tee may take the form of the freezing of future export income at its place of origin; a thoroughly solvent foreign partner willing to back up the loan either directly or indirectly, or some solid asset outside the frontiers of the debtor country. Loans of this type are frequently made in the form of bonds, since many creditors feel that these instruments are less vulnerable to default.²³ The cost of these new credits is usually very high (several points over LIBOR) and the maturity is usually quite short (for example, three to five years). Investors often prefer to carry out this type of transaction with the private sector, because unlike the public sector, many Latin American private enterprises enjoy a relatively solid financial situation.

This form of private finance is not totally satisfactory, since it is conditioned by special arrangements which are usually difficult to organize and negotiate. However, in extremely tight capital markets it does at least give some relief. In fact, the niche financing of the 1990s is largely a repetition of what happened in Latin America and the Caribbean in the 1950s and 1960s, when most of the private loans had special direct or indirect guarantees in the form of blocked assets, or else were connected with direct foreign investment projects.

In order to promote niche financing, it is important that the debtor country should have preferential rules for dealing with the new debt so as to separate it as far as possible from the problems of the old debt. It is also necessary that there should be a clear policy designed to promote direct foreign investment in line with national priorities, since foreign enterprises, including the commercial banks, can generate parallel fresh finance through their investment projects in the debtor country.²⁴

²³ So far, no Latin American country has defaulted on the service of its international bonds. For this reason, it is usually considered that bonds enjoy preferential treatment. At the same time, however, the situation regarding bonds is obviously linked to the fact they represent a very small fraction of the total external debt of the region. Thus, the optimism of investors with regard to bonds could run into the same error of composition which affected the decisions of the bankers in the 1970s. See Friedman, 1977.

²⁴ For example, a recently privatized Mexican airline purchased new aircraft partly financed with a loan from the

It should also be noted that some countries are obtaining international credit without special guarantees. In 1990, Mexico will issue over US\$2 billion of international bonds and other securities, and a significant part of these apparently do not have any special guarantee. Venezuela will also sell at least US\$ 150 million of bonds in 1990 without any special security arrangements (West, 1990). Chile, for its part, obtained the first voluntary loan from the private banking system to a Latin American country since 1982, in the amount of US\$ 20 million (*LDC Debt Report*, 1990).

Mexico is the country which has gained most access to international credit without special guarantees, especially through bond issues. An important factor in this new form of credit (which could mark the beginning of a new credit cycle for Mexico) has been the success of the structural adjustment carried out by this country. The turning point for creditors seems to have been the Government's announcement that it would privatize the national banking system (an important political symbol of the consolidation of the Government's economic programme) and the manifest interest shown by the United States in economic integration with Mexico, which will open up many new investment opportunities. Other factors which had an influence in this respect were the recent rise in oil prices, which has given the country an easier foreign exchange position after the only relatively modest relief obtained through the Brady Plan agreement, and the heavy return flow of Mexican capital from abroad, attracted by the very high yield of the bonds issued by Mexican private and State enterprises.

ii) *Direct foreign investment.* In view of the credit restrictions on Latin America, it is expected that in the 1990s the countries will take more decided steps to exploit the opportunities for attracting foreign investors. The truth is that many countries of the region have not had very transparent policies regarding this source of financing: this partly explains why the levels of direct foreign investment in the region are only half those for Asia (table 5). It seems essential to streamline foreign investment policies, since transnational corporations bring their own fi-

Chase Manhattan Bank, which is one of the new shareholders in the enterprise.

Table 5
DIRECT FOREIGN INVESTMENT, AS A
PERCENTAGE OF GDP

	1984	1985	1986	1987	1988	1989
Argentina	0.3	1.4	0.7	—	1.2	1.7
Brazil	0.7	0.6	0.1	0.4	0.9	0.2
Chile	0.3	0.7	1.9	4.9	4.6	6.0
Colombia	1.5	2.9	1.6	0.8	0.5	0.8
Costa Rica	1.4	1.7	1.5	5.0	1.8	2.0
Ecuador	0.4	0.4	0.7	0.8	0.8	0.9
Mexico	0.2	0.3	1.2	2.3	1.5	1.1
Peru	-0.4	—	0.1	0.1	0.1	—
Uruguay	0.1	-0.2	-0.1	0.1	-0.2	0.1
Venezuela	—	0.1	—	—	0.1	0.2
Average	0.5	0.6	0.5	0.8	1.0	0.7
Asia ^a	1.1	0.9	0.8	1.4	2.0	2.6

Source: Institute for International Finance, *Fostering Foreign Direct Investment in Latin America*, Washington, D.C., July 1990.

^a Indonesia, Malaysia, Philippines, Singapore and Thailand.

nancing and foreign investors can formulate projects and secure financing even in difficult economic conditions.

It is worth briefly mentioning a new foreign investment mechanism which is giving satisfactory results in various countries of the region: namely, mutual country funds which channel foreign investments to the stock exchanges of developing countries. These funds can be either "open" (in which case an increase in the capital of the fund is allowed) or "closed" (in which case their activity is limited to the reinvestment of the capital originally authorized by the economic authorities of the country). In Latin America, the number of these funds (many of which are registered on the New York and London stock exchanges) increased from seven in 1988 to 19 in 1989, and it is expected that others will be authorized in 1990 (*Latin Finance*, 1990, pp. 28-56). They represent attractive options for investors who do not have the time or the facilities for evaluating the various opportunities on the developing countries' stock exchanges. They are also attractive to certain countries, since they open up new access to capital which would otherwise not come to the country. In Chile, half the direct foreign investment in 1990 (which totalled US\$ 600) came from these funds.

b) *Multilateral finance agencies*

i) *Direct financing*. As in the 1960s, Latin

America should find one of its most important sources of financing in the multilateral agencies. These agencies have already increased in importance, as is demonstrated by the fact that their share of the region's debt rose from 6% in 1982 to over 15% in 1988. All in all, these organizations apply broader criteria than those of the private sector, so that they may disburse their resources even in complex economic situations, such as that of Latin America in the 1980s.

The access to these agencies has deteriorated in recent years, however, and their net transfer of resources to Latin America has become negative. The region's net movements of resources with the World Bank and the Inter-American Development Bank (IDB) registered balances that were negative for the region in 1987-1988, and the same occurred with the IMF in 1986-1988 (table 6). The information suggests that in 1989 the IDB's transactions with Latin America left a small positive balance for the region, but those of the World Bank and the IMF continued to turn in substantial negative balances.

This discouraging result is due to two phenomena: the growing debt service commitments of the region with these agencies, and the restrictions on the disbursement of fresh loans. This latter element is related to many factors, among which mention may be made of the limitations on the base capital of those agencies and the rigid formulas governing the disbursement of their

Table 6
LATIN AMERICA AND THE CARIBBEAN: NET RESOURCE TRANSFERS
WITH MULTILATERAL FINANCE AGENCIES
(Billions of dollars)

	1983	1984	1985	1986	1987	1988	1989
<i>Total</i>	7.5	5.2	2.5	1.1	-2.3	-2.9	-2.6
IMF	5.7	2.7	0.6	-0.8	-1.7	-2.1	-1.7
World Bank	0.8	1.1	0.7	1.4	-0.5	-0.7	-1.1
IDB	1.0	1.4	1.2	0.5	-0.1	-0.1	0.2

Source: ECLAC, on the basis of data supplied by the World Bank, the Inter-American Development Bank (IDB) and the International Monetary Fund (IMF). The 1989 figure for the IMF was provided by the Latin American Economic System (SELA).

loans, including frequently excessive conditionality.

There are solutions which could make the resource transfers of these multilateral agencies positive once again. One of these is to increase their capital. In this respect, IDB—which recently received over US\$ 20 billion of fresh capital—is in a position to increase its resource flows to the Latin American countries considerably in the 1990s. The IMF, too, will receive US\$ 60 billion of fresh capital through the recent approval of a 50% increase in its members' quotas. Nevertheless, the multilateral agencies must be strengthened even more. In particular, the increase in the IMF's quotas was a good deal less than that initially requested by that agency, so that the recent appeal by the Latin American countries to shorten the deadline for a new review of the quotas before 1993 is extremely pertinent (SELA, 1990).

It is also important to ease the conditionality in order to reverse the negative resource transfer. If the policy goals were less precise and the term of adjustment programmes longer, this would avoid the now frequent suspensions of disbursements for failure to meet the severe criteria of the structural adjustment programmes.

Finally, more direct ways should be sought to relieve the burden of the debt service owed to the multilateral agencies. In view of the fact that these agencies will be among the few creditors generally willing to disburse loans to Latin America in the 1990s, perhaps it is not wholly advisable at present to put forward a request for the re-scheduling of the multilateral debt, since this

could directly affect the credibility of these agencies as preferred creditors. In view of the growing pressure exerted by the multilateral debt service burden in many countries, however, it is urgently necessary that some special mechanisms should emerge in the 1990s for refinancing on a concessionary basis (directly or indirectly) the region's outstanding debts with these agencies. It is well known that a considerable amount of time elapses between the appearance of a good proposal and the moment when it is accepted by the multilateral agencies, so that the issue of the refinancing of the debt with these agencies should be brought forward immediately by the Latin American countries in the appropriate international forums.

ii) *Indirect financing.* The catalytic role that can be played by official multilateral bodies in the mobilization of foreign private resources could assume great importance in the 1990s. There are indeed many programmes—both multilateral and bilateral—which are aimed at promoting the participation of foreign private capital in the developing countries by providing direct or indirect security with the support of official bodies.

These programmes are of various types. Both the World Bank and the IDB offer co-financing programmes in which they loan resources jointly with private lenders. The participation of the multilateral body in these loans, or its direct guarantee of part of the payments schedule, acts as an incentive to attract fresh private financing to the developing countries.

The two bodies in question also have subsid-

itary organizations which act as catalysts for investments in the private sector of developing countries. Thus, for example, the International Finance Corporation (IFC) of the World Bank takes out equity in new enterprises in developing countries, lends to them from its own resources, and also organizes syndicated loans in the international credit markets for new projects proposed by the private sector in the developing countries. The mere fact that such multilateral agencies are participating in these new projects (as shareholders, lenders or agents) creates greater confidence and thus succeeds in attracting the participation of foreign investors.

Once again, perhaps the best way of describing the possibilities offered by this type of financing is to give a concrete example. In 1989 the Chilean enterprise "Celulosa Arauco y Constitución" succeeded in financing a fresh investment project totalling US\$ 600 million, partly thanks to the participation of the IFC. The catalytic role of this official agency had various dimensions. On the one hand, the IFC used its high creditworthiness to organize a syndicated loan of US\$ 41 million on the international markets, which was underwritten by a considerable number of foreign banks even though the loan did not enjoy any special guarantee. The participation of the commercial banks was also stimulated by the IFC's decision to grant the enterprise a direct loan of US\$ 40 million, plus US\$ 15 million in the form of quasi-equity.

The catalytic role that can be played by official agencies is nothing new. However, not enough use has been made of it, possibly because of the abundance of private financing that was available in the 1970s. In the 1990s, the Latin American countries should take decided steps to explore opportunities of this type and they should pressure the official agencies to expand

the scope of such programmes as soon as possible.

c) *Repatriation of flight capital*

It is well known that the residents of many Latin American countries keep a large amount of resources abroad. Although all the experts agree that this flight capital has come to represent a considerable amount of resources, they are unable to agree on the proper way to measure it, so that no precise figures can be given in this respect. This has not prevented an extensive debate taking place on how to promote its return, however.

There can be no doubt that this private capital represents a potential source of external finance for the 1990s. Indeed, some analysts consider that its return could be a major factor in solving the problem of the net transfer of resources. Flight capital is a very volatile financial asset, however, and normally it is the first to leave a country and the last to return on a stable basis. Rather than being a potential solution to the debt problem, therefore, flight capital is rather a result of it. It cannot be expected to return in large amounts and on a permanent basis until there are expectations that the country can service its debt and grow at the same time. In many cases, these conditions can be attained only through a major reduction in the debt, carried out as part of a coherent structural adjustment programme.

The order of cause and effect should therefore be reversed: a prior condition for the return of this capital for longer than a few months is the achievement of a solution to the debt overhang. Even when this condition has been achieved, the return of such resources will also clearly depend on the adoption of coherent economic policies and clear rules on the treatment of private capital.

II

Trade

As the Latin American countries will probably have only limited access to external finance in the 1990s, the second challenge facing them is

that of generating sufficient foreign exchange to offset this drop in the availability of capital. The only sustainable way of generating such foreign

exchange is through the expansion of exports, since the region's imports have already been drastically cut: in 1988 the external purchases of the countries of the region were only 80% of their 1980 level. Furthermore, although measures to reduce the debt service may reduce net transfers abroad in the 1990s and hence lower the level of the trade surplus needed to service the debt, the expansion of exports will be the only dynamic means of increasing the import capacity of the Latin American economies.

The awareness of the urgent need to increase external sales has become so widespread that today export promotion has become a true *leitmotiv* in the whole region. For many countries, however, this is only a recent development; in this case it is not easy to formulate trade policies that can take advantage of the opportunities offered by changing and uncertain international markets. Before outlining Latin America's prospects in this field, it is worth reviewing the features of the region's current insertion in world trade and the latest lines of its trade policy.

1. *The shortcomings of Latin America's current form of insertion in world trade*

A few figures show that Latin America's position in world trade has deteriorated over the post-war period. Thus, for example, the share of the mem-

ber countries of the Latin American Integration Association (ALADI) in world exports went down from 6% to 4% between 1960 and 1980, whereas that of the developing countries as a whole rose from 22% to 29% over the same period. This meant that the share of exports in the gross domestic product of the former countries virtually stagnated at between 10% and 11%, whereas it more than doubled for the developing world as a whole (table 7).

The fact that the share of manufactures in the external sales of ALADI has increased over this period is not much consolation. To begin with, this increase (from 18% to 34% of non-oil exports) was far below that registered by the developing countries as a whole (from 21% to 48%). As a result, the region's share in world trade in manufactures remained at only 3%, whereas that of the developing countries as a whole rose from 12% to 21% between 1965 and 1980.

An examination of the structure of these exports of manufactures reveals further shortcomings. Thus, the external sales of industrial goods by the ALADI countries are heavily concentrated on semi-industrial products involving little processing, especially metals. In contrast, the share of consumer goods in general (both those which make intensive use of labour and those which have a high research and technological content) is a good deal lower, although it is precisely the

Table 7
LATIN AMERICAN AND OTHER DEVELOPING COUNTRIES:
SELECTED FOREIGN TRADE INDICATORS

	ALADI			Developing countries		
	1960	1970	1980	1960	1970	1980
Share of exports in GDP	...	9.7	10.8	10.3	10.7	23.4
Share in world exports						
—All exports	5.6	4.0	4.0	21.9	18.4	28.6
—Exports of manufactures	2.3	2.7	3.3	10.9	13.4	20.6
Export structure						
Manufactures as a percentage of non-oil exports	17.6	25.6	33.9	21.2	33.1	48.0

Source: Prepared by the authors on the basis of figures from United Nations, *International Trade Statistics Yearbook*, and UNCTAD, *Handbook of International Trade and Development Statistics*.

trade in these products which has shown greatest dynamism in past decades. In 1980, for example, the region only accounted for 4% of world exports of textiles, whereas the figure for the developing world as a whole was 60%. Likewise, ALADI's share in the trade in goods with a greater technological content increased only marginally, remaining below 1%, whereas that of the developing countries as a whole doubled and amounted to more than 7% in 1980.

In short, Latin America's share in international trade up to the 1980s was insufficient and inappropriate. It was insufficient, because in the years when the other economies were increasing their integration into world trade, Latin America reduced its participation. And it was inappropriate because in this period the region specialized precisely in those products whose trade was growing most slowly.

How are these shortcomings to be explained? External factors do not seem to have played much of a part in them. World exports expanded by almost 15% per year on average over the period in question, and as already stated, the other developing regions were able to take advantage of this extraordinary dynamism to increase their share of world trade. Nor does resource availability seem to have been an obstacle: as is well known, Latin America has relatively abundant natural resources; its social development (education and health) and economic (average income) indicators also place it in a relatively favourable position compared with other developing regions (Maddison, forthcoming); and finally, between 1960 and 1980 the region was not short of external resources either: in the 1960s Latin America was one of the favourite recipients of foreign investment, while in the 1970s it received a little under two-thirds of all the bank loans to developing countries (Devlin, 1989 pp. 40-41). Indeed, the region's degree of industrialization (and hence its level of production of precisely those goods which are flagrantly absent from its exports) was one of the highest in the developing world over this period.

The cause of this deficient insertion into international trade stems therefore from the use made of the available resources, that is to say, the policies applied. Indeed, Latin America's development strategy (known broadly as import substitution industrialization) has been the sub-

ject of much criticism in recent years. Such criticism cannot be applied indiscriminately, however, for initially this strategy was very successful, as it made it possible to increase the domestic availability of resources which should subsequently have permitted a wider insertion in international markets. Indeed, the need for an import substitution phase in order to initiate an industrialization process is now normally recognized in academic circles.

The error was, then, the failure to link that industrialization strategy with a coherent foreign trade policy. Latin America, unlike several South East Asian countries, conditioned its import substitution industrialization essentially to the growth of domestic demand, leaving aside almost completely any export ambitions. Latin American industry thus grew under an umbrella of high protectionism which ensured a good level of profits merely through control of the domestic market. The lack of exposure to external competition inhibited efforts to improve efficiency and reduce costs: a problem particularly acute in small countries, where scales of production are not sufficiently large to help reduce costs. The lack of participation in external trade also inhibited the achievement of higher levels of quality and compliance with international rules and standards, so that Latin American industry was gradually marginated from technical progress (ECLAC, 1989a). As a result, the region gradually lost competitiveness at the international level. Indeed, the growth of industrial productivity in Latin America between 1950 and 1980 is estimated to have been only half that registered in the world economy between those years (Maddison, forthcoming).

2. Trade policies in the region in the 1980s

It could be argued in a sense that the privileged access which the region had to external resources was actually a drawback, since it made it possible to conceal the serious shortcomings of its form of insertion into world trade. At all events, the abrupt cut in external finance from 1982 onwards clearly showed the size of the problem, since the ALADI countries' small trade surplus on goods and services did not even allow them to cover a one-hundredth part of the net transfer of resources which they had to make that year

(table 8 and figure 1). The first policy response to this gap was a pronounced devaluation of nominal exchange rates, accompanied by various trade restriction measures, such as the almost generalized application of exchange controls, increases in tariffs and import duty surcharges, and greater use of non-tariff barriers and quantitative controls. Given the size of the external deficit, it is understandable that initially the countries preferred to use such direct controls, which were easier to manage and more rapid in their effect. Indeed, after adopting these measures Latin America managed to increase its trade surplus considerably in an extraordinarily short time (figure 1).

In most of the countries, however, this trade surplus was generated at the cost of a sharp reduction in imports and an acute domestic recession. Since this situation obviously could not be sustained, as from 1984-1985 the countries began to seek other policies which would enable them to maintain the trade surplus while at the same time promoting domestic growth. Obviously, any prescription in this respect must center around a new trade policy. In practice, however, this "new" trade policy boiled down to the application of a by no means novel recipe: rapid external trade liberalization, with the elimination of direct controls and non-tariff barriers; reduction of the average level and spread of tariffs; elimination of programmes of direct export subsidies, and devaluation.

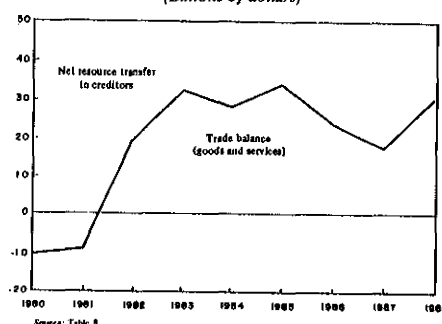
The multilateral agencies actively promoted this formula, particularly within the framework of the World Bank's structural adjustment loans: external trade liberalization measures have been included among the conditions for almost 80% of such loans, and have accounted for almost 30% of all the conditions applied (World Bank, 1988, p. 59). It is hardly surprising, then, that liberalization has been the main feature of trade policy in the region since 1985, although the forms and results have varied considerably from one country to another. Thus, one by one, the Latin American countries have moved towards a sometimes radical reform of their trade policies. As a result, the weight of non-tariff restrictions and the average tariff level went down by more than a third for the ALADI countries between 1985 and 1988 (table 9). The reduction in trade restrictions would be even greater if the figures

Table 8
LATIN AMERICAN INTEGRATION ASSOCIATION
(ALADI): EVOLUTION OF EXTERNAL
ACCOUNTS, 1980-1988
(Millions of dollars)

	Trade balance (goods and services)	Net resource transfer to the region
1980	-7 787	10 172
1981	-10 303	8 743
1982	148	-19 765
1983	28 336	-32 481
1984	37 266	-28 120
1985	32 822	-33 960
1986	15 873	-23 819
1987	20 917	-17 640
1988	23 435	-30 539

Fuente: ECLAC, on the basis of official figures.

Figure 1
LATIN AMERICAN INTEGRATION
ASSOCIATION (ALADI): TRADE
BALANCE AND NET RESOURCE
TRANSFER
(Billions of dollars)



for 1989 and 1990 could be included, when Peru and Venezuela embarked upon large-scale trade reforms while Argentina, Brazil, Colombia, Ecuador and Uruguay significantly extended their previous liberalization measures. Therefore, the trade regime of the region as a whole (with the possible exception of the Dominican Republic) can now be assessed as considerably more liberal than that in force in the early 1980s (ECLAC, 1990d).

3. Performance and prospects of the region's international trade

The indicators for measuring the precise effect of this change of policy in the external sector are not yet available. At first sight, however, the re-

Table 9
LATIN AMERICAN INTEGRATION ASSOCIATION (ALADI): EFFECT OF RECENT
TRADE LIBERALIZATION POLICIES

	Non-tariff restrictions ^a		Average tariff		Export growth, 1987-1988 ^b	
	1985	1988	1985	1988	All exports	Non-traditional exports
Total ALADI ^c	32	21	51	31	32	52
Argentina	50	31	28	26	33	18
Bolivia	20	1	20	20	-7	4
Brazil	34	16	81	42	51	62
Colombia	96	74	83	48	...	35
Chile	1	...	35	17	68	51
Ecuador	38	27	50	49	1	20
Mexico	19	12	34	16	29	64
Paraguay	...	...	...	...	...	...
Peru	50	53	54	66	6	17
Uruguay	1	1	32	29	29	26
Venezuela	30	33	17	18	14	34

Source: Prepared by the authors on the basis of figures from UNCTAD, *Trade and Development Report, 1989*.

^a As a percentage of imports.

^b Percentage. Cumulative growth rate for 1987 and 1988.

^c Average percentage, weighted according to the imports of each country. Does not include Paraguay, for lack of comparable figures.

sults seem to have been positive, since between 1986 and 1988 the region registered a big expansion in its exports, especially of non-traditional products, which grew by more than 50% (table 9). This success is due at least in part to the two favourable effects which trade liberalization usually has for exporters. Firstly, such policies eliminate, or at least reduce, the administrative obstacles and inconsistencies which have been an almost constant feature of the Latin American economies. Secondly, they do away with many of the price distortions which lead to inefficiency in resource allocation, thus enabling the countries to make better use of their comparative advantages.

Indeed, an aspect of Latin America's external trade which has been frequently commented upon in recent years has been the spectacular growth in non-traditional exports of primary products: for example, fruit in Chile, flowers in Colombia and shrimps in Ecuador. Up to a few years ago, no-one would have thought that these products, considered to be of minor importance, could contribute so successfully to the expansion

of Latin America's trade surplus. Thus, a policy of greater openness, by revealing more explicitly the natural comparative advantages, or in a broader sense the advantages of the installed capacity of a country, shows up the availability of products with hitherto unsuspected, but nevertheless significant, potential for sales abroad. This permits an increase in exports without necessarily requiring an increase in installed capacity or the incorporation of new technology.

Can it be deduced from these good results that an extension and intensification of the liberalization process will suffice to improve Latin America's participation in world trade? A more detailed examination of the facts does not back up this conclusion. Intuitively, there does not seem to be any systematic relation between the degree of liberalization achieved and exports: it is well known, for example, that Brazil, which was until recently one of the Latin American countries which placed most restrictions on trade, was the main beneficiary of the export boom of the 1980s. There are also substantive reasons for such doubt, however: without con-

sidering the domestic costs of liberalization, which may be extremely high but go beyond the scope of this study, one may question the capacity of such a policy alone to guarantee adequate export growth in the medium and long term, for better utilization of the natural comparative advantages of the country (which we already mentioned as a benefit of trade liberalization) will soon run into two types of limitations, some domestic and others external.

The external limitations are the easiest to identify. The international markets for primary commodities or semi-industrial products, where Latin America currently has clear comparative advantages, are paradoxically also the most severely restricted and controlled. The managed trade agreements governing trade in textiles, footwear, steel and motor vehicles, for example, to name only a few cases, are all too well known. Thus, Latin America's expanding exports have rapidly faced restrictions in these sectors, and the existing limitations (for example, on trade in textiles or steel) have become effectively binding as countries which were hitherto totally absent or not very active in such trade entered the markets. New barriers have also been erected in order to protect domestic producers of goods which were previously free from this type of restriction, such as flowers or certain particular types of fruit.²⁵ The practice of managed trade has undoubtedly been growing in recent years, reaching some 10% of world trade in 1984. It has a particularly harmful impact for the majority of Latin American countries, which are currently trying to increase their sales on world markets, since these agreements tend to protect the position of established exporters, to the detriment of those recently entering the market.

²⁵ An interesting example is that of the kiwi, a fruit which was until recently virtually unknown but which was introduced into the United States and European markets with considerable success by New Zealand producers. The growing demand for this fruit led a number of farmers in California to begin its cultivation, and consequently also to begin to pressure for restrictions on imports of this product. Likewise, Colombian flower exporters have had to defend themselves against an attempt to introduce a quota on the importation of roses equal to 30% of domestic consumption. For further details on this latter case, see ECLAC, 1990e, p. 70.

The adverse effects of this growing application of managed trade agreements is also complicated by the recent emergence or consolidation of big regional blocs in the world economy. One of these is currently taking shape in North America, with the free trade agreement signed in 1988 between the United States and Canada and the current negotiations for bringing Mexico into this scheme. One of the objectives of the so-called Bush Initiative, announced by the President of the United States at the end of June 1990, is to extend this free trade zone "from Alaska to Tierra del Fuego" through the negotiation of bilateral trade agreements which may be either straightforward free trade agreements or simply framework agreements that seek a gradual reduction of the barriers to trade between the United States and the other countries of the region.

With the consolidation of similar regional blocs in Europe and Asia and the stagnation of the multilateral trade negotiations in GATT, the prospects of a free trade zone for the Americas cannot but attract countries which, in its absence, would run the risk of being left on the sidelines of major world trade flows. Thus, by the end of 1990 five countries of the region (Bolivia, Chile, Colombia, Ecuador and Mexico) had already signed framework agreements with the United States and one of them (Mexico) was well advanced in the negotiation of a free trade agreement. The idea of a regional bloc is also perfectly logical in economic terms: the United States is, after all, the main market for the region's exports, since it absorbed 35% of the total external sales of ALADI in 1989. In contrast, the share of these countries in the total exports of the United States has remained relatively modest (12%), thus leaving open significant potential for expansion (ECLAC, 1990a).

The way to materialize this theoretically tempting objective does not appear to be so easy, however. Firstly, it will require negotiations between countries that are very different from the economic, trade and political point of view. The reciprocal concessions involved in such agreements could be very uneven because, for example, of the significant differences in tariffs currently observed. Latin American tariffs are still relatively high and uneven, even after the recent reforms, whereas the duties on Latin American

exports to the United States are generally relatively low. Thus, the bulk of the trade concessions which that country could offer would be basically concentrated on the elimination of non-tariff barriers, especially in the areas of steel, textiles and agricultural raw materials. It cannot be guaranteed, however, that the United States Congress will readily agree to eliminate protection for such sensitive sectors.²⁶ Furthermore, some countries—such as those of Central America and the Caribbean—could be adversely affected if they lost the preferential access to the United States market which they currently enjoy and had to compete with the bigger economies of the region.

In spite of these specific difficulties, the new features of world trade have made trade negotiation not so much an option as an obligatory step in order to achieve an efficient form of insertion in international trade. This means that in a context of more managed trade and tighter regional blocs, the factors determining the international insertion of countries have changed: thus, for an exporter country, its bargaining power has become even more important than its physical comparative advantages in determining its form of insertion in the market. Unfortunately, most of the countries of the region have not displayed much expertise in this field. To give a recent example, the Latin American countries have entered the GATT negotiations in a relatively disunited manner and have consequently not been able to play a leading part in the negotiations on the liberalization of agricultural trade: a sector in which they would have a great deal to gain. As a result, the initiative in this field has remained in the hands of the United States and the European Economic Community, while Latin America's role has been limited to accepting or rejecting the options presented by these two powers. It should also be stressed that the above-mentioned liberalization of trade in the region has been applied in a unilateral manner and has not been accompanied by the search for recip-

rocal concessions which is usual in a process of reduction of trade barriers.

It is therefore very important that Latin America should begin to link its external negotiation policy more explicitly with its domestic trade policy. At the national level, there are some easily implemented measures that could help in this respect: for example, the more extensive and systematic use of the diplomatic network in order to publicize the region's products; the provision of assistance in penetrating markets, and measures to prevent possible protectionist attacks (ECLAC, 1990c). At the regional level, matters will undoubtedly be rather more difficult. It may be argued that, in view of the big disparities which exist between the countries of the region, both with regard to their size and to their degree of trade openness, there is not much room for a joint negotiating strategy. This does not, however, rule out the definition of a common frame of reference or the formation of subregional negotiating blocs (ECLAC, 1990a). Another possibility is that of actually putting into practice the declarations of intent—so frequently repeated but so rarely fulfilled—regarding greater openness of intra-regional trade. The many regional bodies which exist could be used not only as forums for negotiations between Latin American countries, but also as negotiating instruments with countries from outside the region. Whatever the method adopted, it is essential to incorporate an aggressive negotiating strategy into trade policy, since without this Latin America will run the risk of remaining on the sidelines of the system of big regional blocs which is emerging.

There is another limitation, more of a qualitative nature, on strategies based on taking advantage of existing comparative advantages. This second limitation reflects the ongoing changes which are taking place in world production and marketing processes because of the constant advance of the technological frontier (ECLAC, 1990e, chapter IV). In recent decades, for example, natural resources and even labour have been making a decreasing contribution to industrial activity. This has been due, *inter alia*, to the efforts to save energy and non-renewable resources, the growing replacement of natural raw materials with synthetic products, and the increasing mechanization of industrial processes. As a result, the strictly "material" content of industrial activity,

²⁶ The difficult negotiations on the renewal of the tariff benefits under the Caribbean Basin Initiative and the adoption by the United States Congress of a law increasing restrictions on textile imports (subsequently vetoed by President Bush) are recently examples of potential difficulties in this field.

and consequently of the manufactures which are marketed, has been gradually going down in contrast with the growing share of the "intangible" content associated with information technology and scientific and technical knowledge. Furthermore, this tendency has been observed in a wide range of products, even in such traditional sectors as foodstuffs or clothing (*ibid.*, p. 69). These changes have played a major part in the relative loss of dynamism of trade in traditional industrial goods (metal products and motor vehicles, for example) compared with branches incorporating a higher degree of technological innovation (electronics, microcomputation, informatics, biotechnology, the development and use of new materials, etc.).

Competitiveness based on the use of comparative advantages (whether abundance of natural resources or of labour) and on the existing idle capacity will therefore be bound to suffer a progressive decline because of the lower weight of such resources in the new production processes. In order to progress from this now spurious form of competitiveness to a more authentic one, the countries must be capable of identifying, imitating and adapting new production processes: that is, continually incorporating the technical progress taking place at the international level into their own processes (Fajnzylber, 1988). This capability will depend not only on the reactions of enterprises to changes in prices, but also on many other factors (including the skill level of the labour force, the domestic entrepreneurial base, and the institutional configuration of the country) and their possible interactions. At all events, achieving authentic competitiveness is a process of a systemic nature, in the sense that it depends on a set of various types of synergies and externalities.

Consequently, the adoption of a system of appropriate relative prices and the maintenance of the main macroeconomic balances may well be a necessary condition for increasing the competitiveness of Latin America, but in no circumstances can it be sufficient on its own, especially in view of the lag in technology accumulated by the region over the 1970s and 1980s. This lag can only be offset through the adoption of an active industrial, technological and educational policy which is co-ordinated with trade policy in order to promote the incorporation of technical progress, higher levels of labour skills, and the linkage of the export sectors with the rest of the production structure.

There is no reason why such a policy should conflict with the trade liberalization efforts: on the contrary, as already noted, it calls for the elimination of the excessive tariff and non-tariff barriers which have hindered much of Latin America's exports for several decades past. Furthermore, the expansion of exports based on "natural" comparative advantages may be turned into a stepping-stone to exports of higher technological content if it is linked with the other activities and used to promote a "export mentality". Trade liberalization on its own will not be enough, however; nor should it systematically take the radical form in which it has frequently been incorporated in the currently prevailing formulas. Thus, in view of the domestic costs of rapid liberalization, some countries may prefer a policy of gradual openness (and even the maintenance of selective and conditional protection for some activities that help to further technical progress) in order to increase their competitiveness progressively in so far as this trade policy permits more decided action in the industrial, technological and educational fields.

III

Conclusions

The 1990s will probably be a period of financial restrictions for Latin America. In the area of conventional financing, access to private international capital markets will be difficult because

of the systemic problem of overindebtedness of the region, the financial difficulties of many commercial banks, the very complex economic, social and political changes which will have to be made,

and the traditionally slow recovery of confidence after such a serious crisis as that which shook Latin America in the 1980s.

Despite this complex financial picture, however, the countries of the region will have opportunities for finding some degree of relief. It has been demonstrated that some foreign lenders and investors are willing to commit themselves in the region provided they can find some external guarantees or forms of security which free this new finance from the risks associated with overindebtedness. While this niche financing, including direct foreign investment, is not sufficient to solve the problem of financial constraints at the macroeconomic level, at least it offers the possibility of promoting new activities of importance at the microeconomic or sectoral level. There are two drawbacks to this finance: it is often difficult to organize, and it is usually relatively expensive. For the countries which manage to eliminate, or at least bring under control, their debt overhang problem, there are prospects of a gradual and difficult return to the private capital markets. There were indeed some signs in 1990 that a few countries of the region were beginning a new voluntary relationship with these markets.

The multilateral finance agencies will probably become one of the most important sources of credit for Latin America in the 1990s. In order to overcome the problem of the negative resource transfer which they currently register with the region, these agencies must increase their loans (through new agreements to expand their capital), ease the conditions which often hinder their disbursements, and strengthen and expand their programmes to catalyze foreign private capital (such as those providing for co-financing and those providing risk capital for private enterprises in the developing countries).

Finally, in view of the region's enormous debt overhang and the current negative resource transfer affecting it, schemes for the reduction of debt and debt service will be another important source of financing. A consensual debt reduction programme is the best option in this respect. Although the Brady Plan raised hopes of a solution of this kind, it is now clear that it does not have sufficient public financial and institutional resources to eliminate the region's debt overhang. In these circumstances, unilateral debt

service restriction by some of the Latin American countries may become a second-best but nevertheless effective solution for reducing the resource drain on the region. Indeed, in 1989-1990 most of the Latin American countries opted for this solution. Unless the Brady Plan is rapidly strengthened, this trend will probably become more pronounced in the 1990s and the countries of the region will make efforts to develop increasingly efficient unilateral schemes to back up their economic programmes aimed at adjustment with growth.

In spite of the above-mentioned possibilities of relieving the financial constraints, the region's severely limited access to foreign capital makes it essential to formulate a new trade policy, as trade in goods and services will be the activity which will offer the greatest opportunities for increasing the region's import capacity. In this field, the external environment does not look so negative: it is expected that in the 1990s world trade will grow on average 6% per year, a rate similar to that registered in the 1970s. Even so, however, an expansion of the region's exports will require profound changes in external trade policy, which has excessively resorted to administrative restrictions and supported a less than coherent system of relative prices during most of the post-war period. These features have clearly limited the full exploitation on external markets of the very considerable natural and human resources which the region possesses. Most of the Latin American countries are conscious of this, and have now begun, albeit to different degrees and on different scales, to liberalize their trade transactions and give more decided support to their exports. Some encouraging results have already been registered in their external sales of non-traditional products.

It is by no means certain, however, that the maintenance or intensification of these liberalizing efforts will be enough to ensure the desired expansion of Latin American exports. In order to achieve this result, it will also be necessary to make profound qualitative changes in the region's form of insertion in the world economy. In this respect, two main lines of action may be indicated. The first is connected with the region's external relations: a significant strengthening of Latin America's negotiating capacity with other countries and regions is essential for the region

not to be margined in a world of growing managed trade where a limited number of regional blocs is clearly emerging. The second concerns domestic policy: the experience of the countries which have secured a successful insertion in world trade (especially those of South-East Asia) shows the need for an active industrial policy to promote the incorporation of technical progress, improve the skill level of the labour force, and thus achieve an authentic and lasting competitiveness which will make it possible to increase the share in world trade while at the same time raising the living standards of the population.

In short, the management of the external

sector in both its financial and trade aspects in the 1990s will call for a great effort of imagination and a good deal of pragmatism. Imagination, because the conditions in both these spheres are changing extremely quickly and leave no room for the use of old schemes. Pragmatism, because rigid ideological schemes are equally unfit for these new conditions and could again impede the countries from taking full advantage of the new opportunities that are arising. The task is by no means easy, but there is reason to hope that Latin America, with its enormous reserves of human talent, will succeed in returning in the 1990s to the path of economic and social growth.

Appendix

NICHE FINANCING IN LATIN AMERICA

Telmex

This Mexican telephone company obtained US\$800 million in external financing in 1989. The secret of this agreement was the fact that the loan was guaranteed with future dollar income generated abroad. Thus, Telmex has a reciprocal agreement with the United States telephone corporation AT&T for the settlement of accounts in respect of telephone traffic between Mexico and the United States. As there are more telephone calls which originate in the United States, Telmex usually builds up positive balances with AT&T, and in recent years these have amounted to around US\$1 billion per year. Telmex is using these accounts receivable from AT&T as a guarantee for the new loan. Thus, the real debtor in this transaction is AT&T, which, in the event of non-fulfilment by Telmex, will have to hand over its payments directly to the creditors of the Mexican company, so that in reality this guaranteed transaction represents an operation of very low risk for the latter.

Lan Chile

A Chilean enterprise made a bid for the purchase of Lan Chile—an airline which the Government wanted to privatize—and obtained US\$29 million from Morgan Guaranty Trust Bank for this purpose. This unusual transaction was possible because of a link between the Chilean purchaser and the Scandinavian airline SAS. SAS, which is an important client of Morgan Guaranty, also undertook to purchase part of Lan Chile directly, and it was this commitment by SAS with Lan Chile which provided the transaction with the necessary security in order for the purchaser to obtain foreign resources.

Comisión Federal de Electricidad de México (CFE)

This enterprise has arranged to obtain US\$235 million abroad. It usually sells part of its excess generating capacity to the State of California, United States, and is using this income from abroad as a guarantee for the foreign loan.

Bibliography

- Altimir, Oscar and Robert Devlin (eds.), *Moratoria en América Latina: la experiencia de los países* (forthcoming).
- América Económica (1990), Mexico City, March.
- Bülow, Jeremy and Kenneth Rogoff (1988), The buyback boondoggle, in W.C. Brainard and George L. Perry (eds.), *Brookings Papers on Economic Activity*, No. 2, Washington, D.C., The Brookings Institution.
- Business International Co. (1990), *Business Latin America*, New York, 2 April.
- CTC (United Nations Centre on Transnational Corporations) (1987), An interview with Ricardo French-Davis, *CTC Reporter*, No. 23, New York, Spring.
- Devlin, Robert (1989), *Debt and the Crisis in Latin America: the Supply Side of the Story*, Princeton, New Jersey, Princeton University Press.
- Dooley, Michael (1988), Self-financed buybacks and asset exchanges, *IMF Staff Papers*, vol. 35, No. 4, Washington, D.C., International Monetary Fund (IMF), December.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1965), *External Financing in Latin America* (E/CN.12/649/Rev.1), New York. United Nations publication, Sales No.: 65.II.G.4.
- _____ (1982), *Provisional Balance-sheet of the Latin American Economy during 1982* (E/CEPAL/L.279), Santiago, Chile, December.
- _____ (1984), *Políticas de Ajuste y Renegociación de la Deuda Externa en América Latina*, "Cuadernos de la CEPAL" series, No. 48 (LC/G.1332), Santiago, Chile, December. United Nations publication, Sales No.: S.84.II.G.18.
- _____ (1988), *The Evolution of the External Debt Problem in Latin America and the Caribbean*, "Estudios e Informes de la CEPAL" series, No. 72 (LC/G.1487/Rev.2-P), Santiago, Chile, September. United Nations publication, Sales No.: E.88.II.G.10.
- _____ (1989a), *Preliminary Overview of the Economy of Latin America and the Caribbean 1989* (LC/G.1586), Santiago, Chile, December.
- _____ (1989b), *Comercio internacional e inserción de América Latina* (LC/R.822), Santiago, Chile, December.
- _____ (1989c), *Transnational Bank Behaviour and the International Debt Crisis* "Estudios e Informes de la CEPAL" series, No. 76 (LC/G.1553/Rev.1-P), Santiago, Chile, September. United Nations publication, Sales No.: E.89.II.G.12.
- _____ (1990a), *Latin America and the Caribbean: Options to Reduce the Debt Burden* (LC/G.1605-P), Santiago, Chile, March. United Nations publication, Sales No.: E.90.II.G.7.
- _____ (1990b), *América Latina frente a la iniciativa Bush: un examen inicial* (LC/R.924), Santiago, Chile, September.
- _____ (1990c), *Latin American and Caribbean Lobbying for International Trade in Washington, D.C.* (LC/G.1632), Washington, D.C., June.
- _____ (Washington Office) (1990d), *Trade policy reform in Latin America in the 1980s*, August, mimeo.
- _____ (1990e), *Changing Production Patterns with Social Equity* (LC/G.1601-P), Santiago, Chile. United Nations publication, Sales No.: E.90.II.G.6.
- ECLAC/SELA (1989), *Endeudamiento externo y crecimiento económico en América Latina y el Caribe: consecuencias económicas de la propuesta de reducción de la carga de la deuda formulada por la Secretaría Permanente del SELA, comparadas con las de escenarios alternativos* (LC/R.841), New York, December.
- Fajnzylber, Fernando (1988), International competitiveness: agreed goal, hard task, *CEPAL Review*, No. 36 (LC/G.1537-P), Santiago, Chile, December.
- Figueroa, Leonel (in the press), La administración de la moratoria peruana, in Oscar Altimir and Robert Devlin (eds.), *Moratoria en América Latina*.
- Financial Times (1990a), "Banks struggle to achieve capital adequacy", London, 30 November.
- _____ (1990b), "The bankers' house of cards", London, 12 November.
- _____ (1990c), "U.S. banks feel the squeeze", London, 30 October.
- _____ (1990d), "U.S. wants Brazil loans delayed because of worry over arrears", London, 16 November.
- Friedman, Irving (1977), *The Emerging Role of Private Banks in the Developing World*, New York, Citicorp.
- Lahera, Eugenio (consultant) (1987), *La conversión de la deuda externa: antecedentes, evolución y perspectivas* (LC/R.614), Santiago, Chile, September.
- Latin Finance (1990), New York, Euromoney Inc., June.
- LDC Debt Reporter (1990), "NMB loan marks new era in Chile's debt strategy", Washington, D.C., 18 September.
- Lustig, Nora (1990), *Poverty and Income Distribution in Latin America in the 1980s: Selective Evidence and Policy Alternatives*, Washington, D.C., Inter-American Dialogue, April.
- Maddison, Angus (in the press), *Growth and Slowdown in Latin America: a Long-run Comparative Perspective*, ECLAC.
- OECD (Organization for Economic Co-operation and Development) (1990), *Financial Market Trends*, Paris.
- Rosenthal, Gert (1990), Beyond Brady, *Latin Finance*, New York, Euromoney Inc., September.
- SELA (1990), Propuesta de América Latina y el Caribe para una solución del problema de su deuda externa, *Capítulos del SELA*, No. 25, Caracas, April-June.
- The Economist (1990), "American banks thirst for capital", London, 3 November.
- West, Peter (consultant) (1990), El nuevo acceso de América Latina al mercado internacional de capitales privados: una nota preliminar, Santiago, Chile, ECLAC, December, mimeo.
- World Bank (1988), *Adjustment Lending. An Evaluation of Ten Years of Experience*, Policy and Research Series, No. 1, Washington, D.C., December.

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.

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Introduction

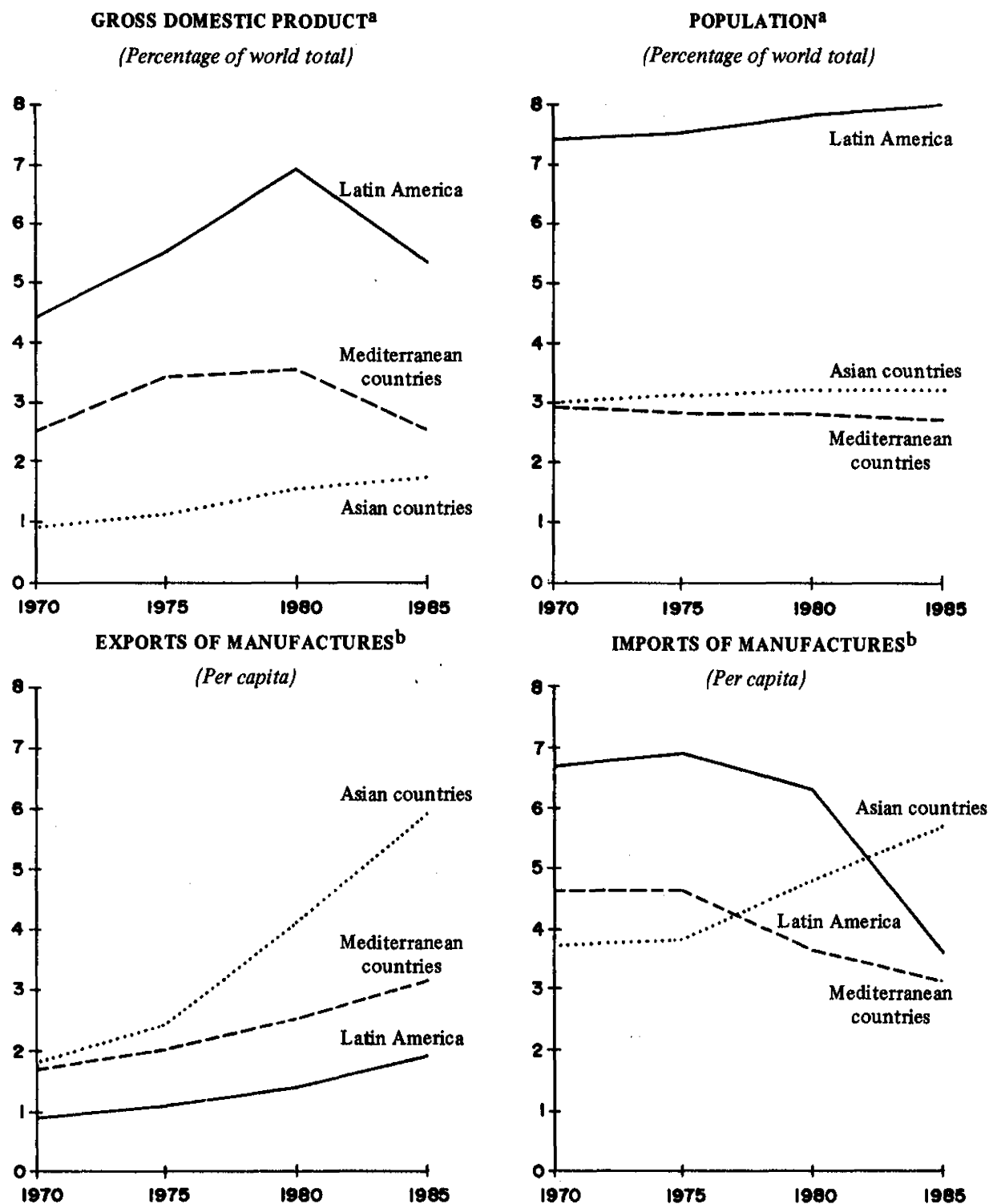
The technological innovation and development effort makes it possible to change production patterns in the industrial sector and increase productivity. In the industrialized countries, there is a close connection between international competitiveness and the incorporation of technical progress, as is 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.

^aAs percentages of the world total.

^bSections 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 techno-industry 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.¹ 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.

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

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.

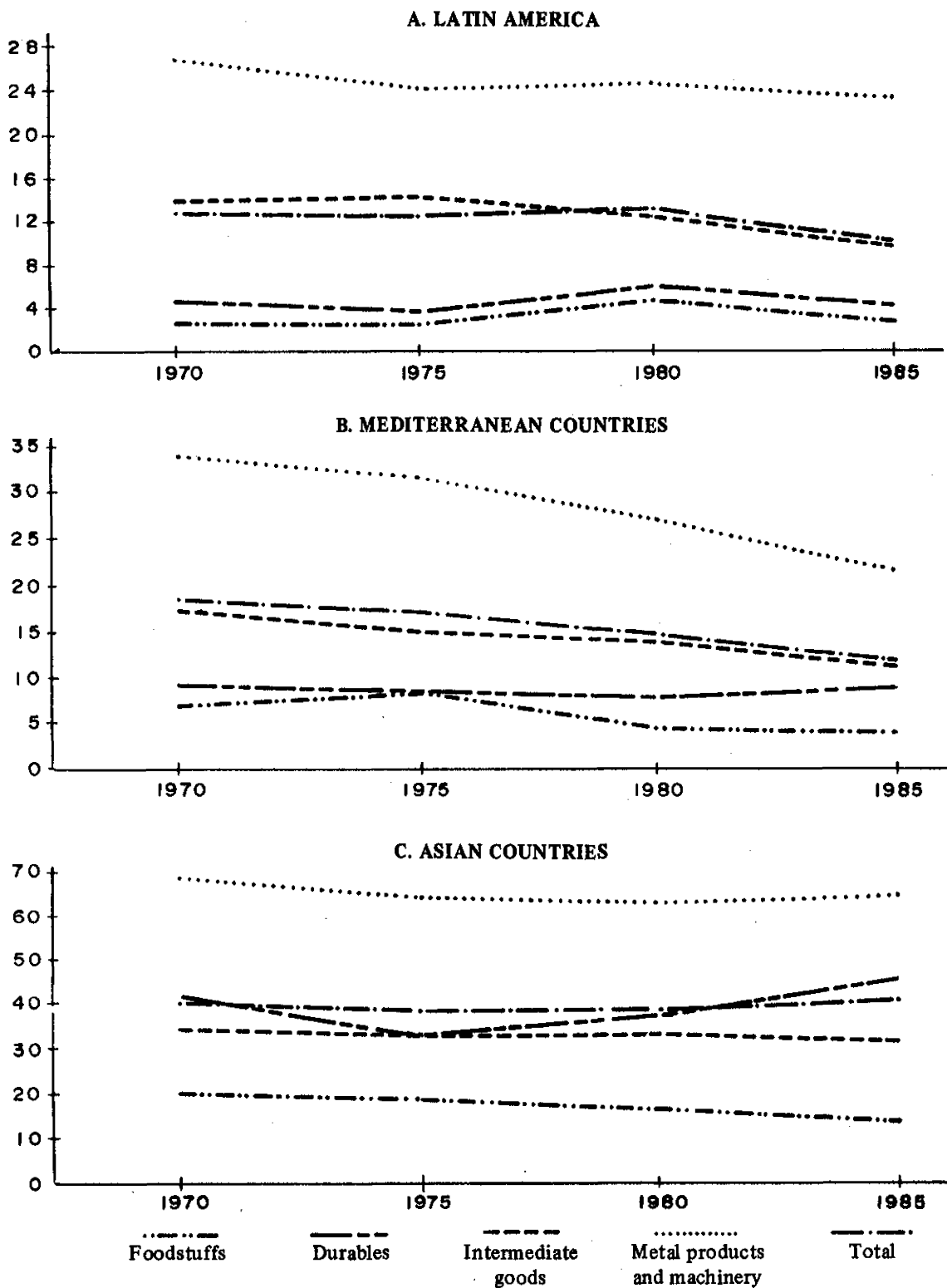
With regard to transport equipment, there were noteworthy advances in production and exports in the areas of shipbuilding (Brazil), construction of railway equipment (all three countries), the aeronautical industry (Argentina and Brazil) and the manufacture of motor vehicles (Brazil and Mexico).

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.² If the indicator for the contribution of a sector is positive, then its trade balance will be more favourable to the evolution

² 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

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

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.

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:

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

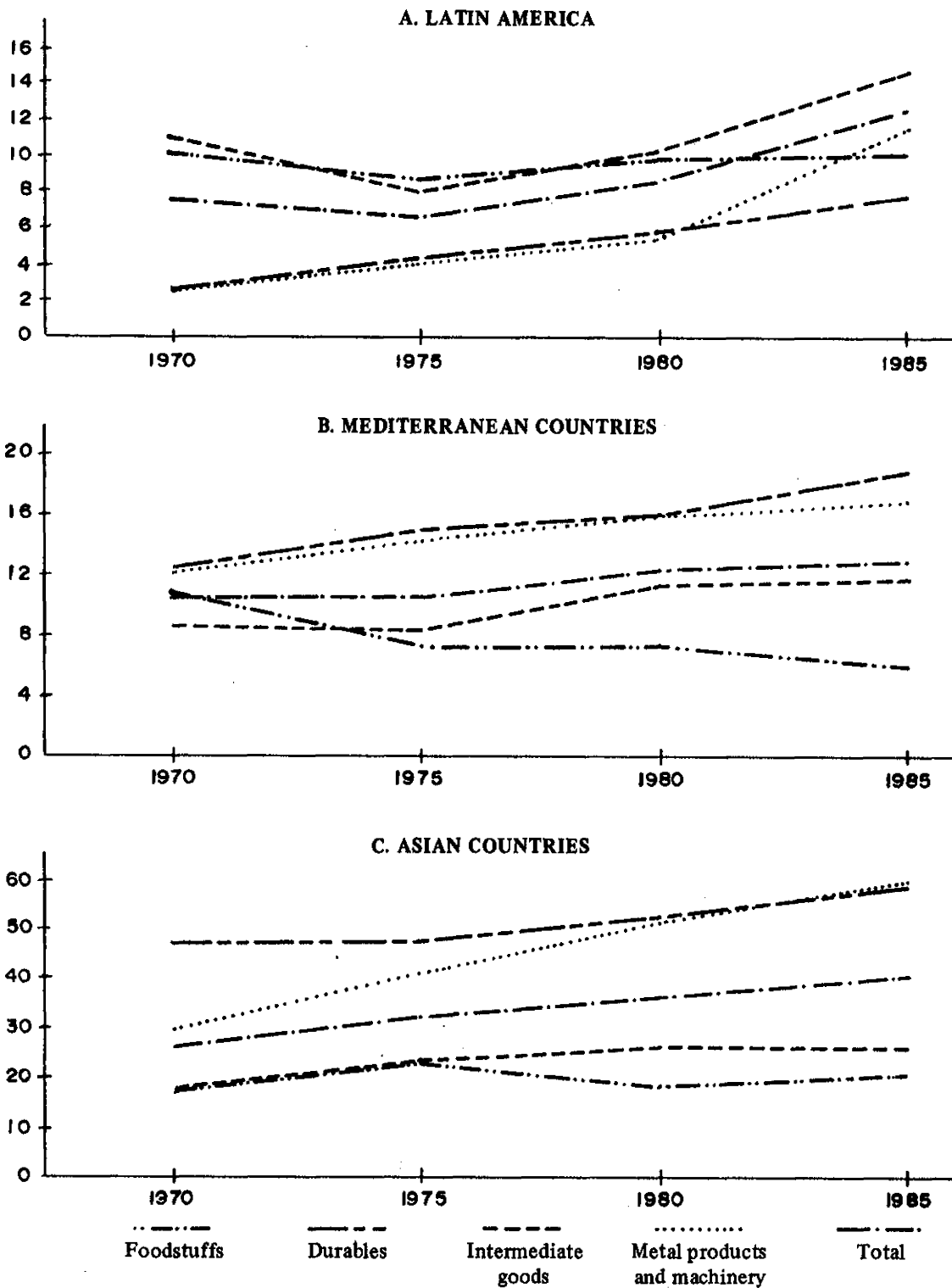
The increase in the world demand for manufactures has boosted the external trade and production of these goods. The magnitude of the growth in exports and imports of manufactured products is now considered a clear reflection of the industrial and economic dynamism of the country producing and selling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

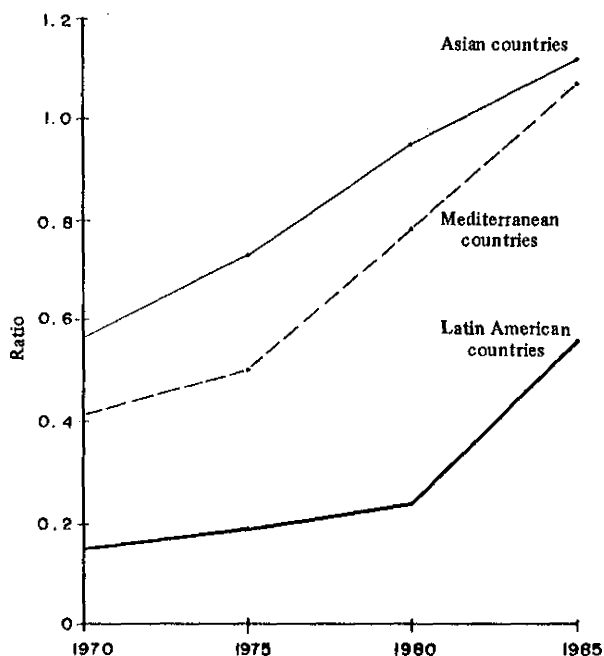
2. The level of international competitiveness

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

**THREE SELECTED DEVELOPING
REGIONS: LEVEL OF INTERNATIONAL
COMPETITIVENESS^a, 1970-1985**



Source: Joint ECLAC/UNIDO Industry and Technology Division.
^aRatio of exports to imports of manufactures (SITC Sections 5 to 8, less Division 68), SITC, Statistical Papers, Series M, No. 34, Rev. 2, United Nations, New York, 1975.

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

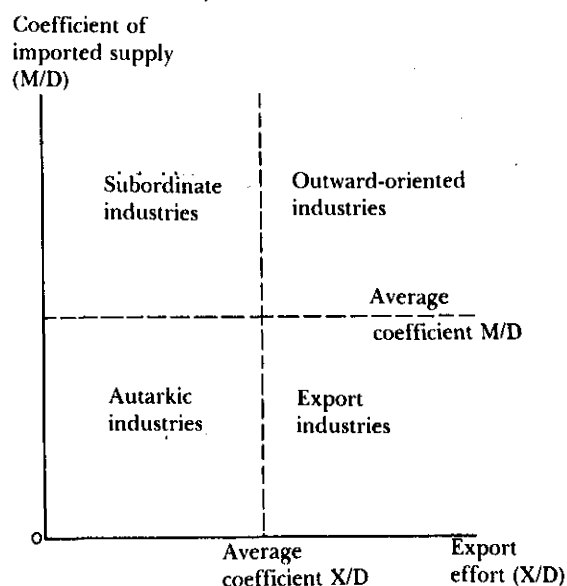
It is clear from the foregoing that there is a relation between the size of domestic demand and the coefficient of imported supply. The bigger the size of a market, the smaller this coefficient will be. This was indeed the case in each of the industrial groups studied.

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 ^a		Argentina	Brazil	Colombia	Costa Rica ^a	Chile	Ecuador ^b	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.

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

^b 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.

Europe 92 and the Latin American economy

*Miguel Izam**

This article analyzes the economic effects which the Europe of 1992 could have on the countries of Latin America. It examines the main factors which led to the signing of the Single European Act in 1985, such as the loss of competitiveness of the European economies, the slow recovery of the European Economic Community (EEC) after the two oil crises, and the rigid politico-institutional system of the Community.

It also examines the economic links between Latin America and the Community and concludes that over the long term these relations have weakened.

Finally, it sets forth the positive and negative economic effects which Europe 1992 could have on Latin America. Among the positive effects it highlights the boosting of trade flows and the reduction of international interest rates. Among the negative aspects, it emphasizes the possible formation of a kind of "fortress Europe" and the low level of priority given to Latin America in the Community's scheme of regional economic preferences.

It is concluded from the foregoing that Latin America could be more seriously affected than the rest of the world if the economic effects of Europe 1992 are unfavourable for the countries outside the Community, while if these effects are positive, Latin America will not benefit from them as much as the rest of the world. The article ends by indicating some possible lines of action for Latin America.

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Introduction

The European Economic Community (EEC) is considered to be the most advanced model of regional economic integration. Six States participated in its founding in 1957: France, Italy, Federal German Republic, Belgium, Holland and Luxembourg. A few years later, six other European nations entered the Community: Denmark, Great Britain, Ireland, Greece, Spain and Portugal.

The general objectives which the EEC has set itself are economic growth and higher living standards for its population, on the one hand, and peace and political union among the nations of Europe on the other. At a more instrumental level, the EEC has set as its objective since its beginnings the creation of a common market in which there is free circulation of people, goods, services and capital. This has not yet been fully achieved.

In the course of its history, the EEC has had to face not only problems originating within itself, but also other challenges deriving from the need to adapt to the demands of the moment and the rapid changes taking place in various spheres of the world environment. Without a doubt, however, it was in the mid-1980s that the EEC had to face the most serious challenge since its foundation. That crisis resulted from the conjunction of three phenomena:

i) The slow economic recovery of the EEC after the first and second oil shocks. On both occasions, the economic indicators of the Community's performance revealed that the inability of its economic system to respond to these challenges had structural causes. This situation was compounded by the obvious inability of the productive system to absorb the growing unemployment, whose features also suggested the existence of a structural problem;

ii) The loss of international competitiveness of the European economies, particularly with respect to the United States, Japan and the recently industrialized countries. To some extent this reflected a certain technological lag, which was manifested in low productivity, and the urgent need to restructure the Community's productive system and modify its weak form of insertion in the international economy;

iii) The extremely rigid politico-institutional system of the Community. It was imperative to make this system more flexible and reformulate

it so that it could respond both to the new and dynamic international conditions and to the internal tensions which had long persisted within the Community and which threatened to affect its credibility both internally and externally.

The awareness of these elements led the EEC countries to sign the Single European Act in February 1986. This was the option which Giulio Andreotti called "choosing between something or nothing". Through the Single European Act the Community seeks to attain the following six objectives: the creation of a market without frontiers, greater economic and social cohesion, the emergence of a European social dimension, a common scientific and technological development policy, the strengthening of the European Monetary System, and co-ordinated action with regard to the environment.

The Single European Act has two key antecedents. The first of these is the determination of the cost of "non-Europe". To this end, in 1985 the Commission ordered an investigation to quantify the cost that the absence of a single market would involve for the Community because of the maintenance of restrictions on the free movement of all the factors of production among its member countries: a cost estimated at around US\$ 224 billion.

The second antecedent goes back to June 1985, when the Heads of State and Government of the EEC undertook to create the Single European Market, the bases for which were set forth in a White Paper. This document sets out a timetable for the adoption of some 300 measures designed to establish the free and full circulation of citizens, goods, services and financial resources among the twelve member countries of the Community, in accordance with the spirit of the treaties setting up the European Communi-

ties, to which end it is aimed to gradually dismantle all physical, technical and fiscal frontiers before 31 December 1992.

The *physical frontiers* are the customs and immigration barriers and controls which persist under the principle of the division of the Community into national States. As the frontier checkpoints represent additional costs in terms of delays and administrative formalities and requirements, it is sought not just to simplify the existing procedures, but to do away completely with domestic frontier controls so as to expedite the movement of people and goods between countries.

The *technical frontiers or barriers* are the obstacles raised by the disparity of national legislation affecting the free circulation of goods and workers and the free provision of services, particularly financial services. In addition to dismantling such barriers, it is planned to establish a framework which favours collaboration between enterprises so that these can benefit from European-scale production.

The *fiscal barriers* are basically the problems deriving from the different rates of Value Added Tax applied by the various countries of the Community and their negative effects on competition and trade within the Community.

There can be no doubt that the implementation of the Single European Market will profoundly influence international economic relations. This article, however, limits itself to identifying and analyzing the probable economic effects that Europe 1992 will have on Latin America. As a first step, the following section examines the main elements which have characterized the economic links between that region and the EEC.

I

Economic relations between Latin America and the European Economic Community

1. Trade relations between Latin America and the EEC

The EEC is the world's biggest trading partner. Its share in world exports rose from 34.8% in 1963 to nearly 38% in 1988, when the Federal Republic of Germany became the biggest exporter of goods in the world, accounting for 11.2% of the total value of international exports.

At the same time, trade in goods within the Community has been growing steadily. In 1963 it represented 48% of the total trade of the EEC, while by the end of the 1980s it came to 60%. It is expected that the Single European Market of 1992 will further stimulate this trend (Commission of the European Communities, 1989a).

With regard to geographical destination (excluding intra-Community trade), around 60% of the Community's exports of goods goes to the industrialized countries, nearly 35% to the developing countries, and almost 6% to the Eastern European countries.¹ This structure, which has remained almost unaltered for the last two decades, will undoubtedly undergo substantial changes as a result of the processes of economic liberalization now underway in Eastern Europe.

If we look at the geographical origin of the imports of goods from outside the Community, we see that between 1965 and 1986 the share of the developed countries increased from 51% to 56%, whereas that of the developing countries went down from 43% to 37%. This is the opposite to what occurred in Japan, where the share of the developing countries in its imports increased from 40% to 51% over the same period, while in the United States this share remained at around 35%. The Eastern European countries, for their part, increased their share in the

¹ It is worth noting that the share of the Eastern European markets in the Community's exports of goods, at nearly 6%, is considerably greater than the 2% and the 1% that those markets account for in the exports of Japan and the United States, respectively.

Community's imports from 6% to 8% between 1965 and 1986.

If we look at these figures in greater detail, we see that the main participants in the trade with nations outside the Community are the countries of the European Free Trade Association (EFTA), which accounted for 24% of the exports and 21% of the imports of goods of the Community in 1986. In second place came the United States, with 21% and 16%, respectively. In this respect, it may be noted that in 1975 the United States was three percentage points ahead of EFTA as a supplier of goods to the EEC, whereas in 1980 EFTA was five percentage points ahead of it.

The Community's trade in goods with the developing countries also shows some interesting features which are worth noting. Three regions (Latin America, the recently industrialized Asian countries, and Africa)² provide altogether 14% of the Community's non-EEC imports of goods: a share which did not vary at all between 1975 and 1986. Of these three regions, Latin America is the only one whose share as a supplier of the EEC has gone down: Africa maintained its share, while the recently industrialized Asian countries increased theirs.

With regard to EEC exports, in contrast, these three developing regions as a whole have actually lost importance as a market for the Community's sales outside the EEC, with their share going down from 16% to 12% over the same period. In this respect, the recently industrialized Asian countries maintained their share, whereas those of Africa and Latin America declined, especially in

² For the purposes of this part of the study, Latin America is taken to comprise the countries of South and Central America, together with the Caribbean islands; the recently industrialized Asian countries are Singapore, Taiwan, Philippines, South Korea, Hong Kong and Malaysia, while Africa includes all the countries of that region except South Africa, the North African Mediterranean countries and the members of the Organization of Petroleum Exporting Countries (OPEC).

the case of the latter region. Thus, Latin America was the only one of these developing regions which lost importance for the EEC with regard to both imports and exports of goods outside the Community.

This happened in spite of the significant increase in the value of trade in goods between Latin America and the EEC in the 1970s and 1980s, for this increase was less than that of the total imports and exports of goods of the two regions, which explains why each of them has lost relative importance for the other as supplier and purchaser. Consequently, over the long term the trade relations between the two groups of countries have weakened.

Thus, in 1970 the EEC was the main purchaser of the exports of the Latin American Integration Association (ALADI),³ accounting for nearly 33% of them. In second place came the United States, which absorbed 28.4% of those exports. In 1987, however, exports to the latter country represented 33.4% of the total exports of goods of ALADI, whereas those to the EEC were no more than 20%. Similarly, in 1970 over a quarter of ALADI's external purchases came from the Community, while in 1987 only a little over 20% did so.

The loss of relative importance of ALADI in overall trade with the EEC is also noteworthy. In 1965, ALADI absorbed 8.2% of the EEC's exports outside the Community and provided 10.5% of its imports. By 1988, however, these shares had fallen to 3.7% and 5.9% respectively, thus showing that this developing region was virtually marginalized from the European visible trade circuit.

Another two elements which help to sum up the nature of the trade in goods between Latin America and the EEC are the maintenance of an increasingly favourable trade balance for Latin America and the persistence of "uneven trade" between the two areas. Thus, whereas manufactures make up 85% of the Community's exports of goods to Latin America, they still do not exceed 20% of that region's sales of goods to the Common Market.

³ For statistical reasons, the figures for ALADI are used as though they were representative of Latin America as a whole in most of this section, but this does not affect the conclusions of the analysis.

The low share of manufactures in Latin America's exports to the EEC contrasts with the growing proportion of such products in the Community's total imports of goods (almost 60%). This indicates that Latin America's export effort should concentrate on manufactures.

2. *The Latin American external debt and the EEC*

Nearly 60% of Latin America's external debt, which amounted at the end of the 1980s to US\$ 416 billion, is with the international banking system. The region has 11 main creditors: eight European countries (United Kingdom, France, Federal Republic of Germany, Switzerland (which is not a member of the EEC), Spain, Italy, Netherlands and Belgium), plus the United States, Canada and Japan.

Latin America's joint credit balance with the banks of those eight European countries was close to US\$ 99 billion at 1987 prices. It was slightly higher than the balance with the United States banks,⁴ and was a little over three times that of the Japanese banks.

The European banks have been seeking to reduce their credit exposure in Latin America, and after the Mexican crisis of 1982 they gradually began to build up contingency funds to guard against sovereign risk situations. This move was subsequently followed by many United States banks. Unlike the latter, the European banks can take advantage of favourable banking and fiscal regulations which even provide for substantial tax deductions. Thus, in 1989 the European banks had reserves covering between 50% and 80% of their commitments with developing countries, whereas the reserves of the United States banks were only between 30% and 70% of their commitments.

Partly because of their bigger reserves, the European banks have given only lukewarm support to the Brady Plan and are showing greater reluctance to make fresh loans at a time when they are seeking to reorient their credits towards the developed countries. At the end of 1986,

⁴ This contradicts the generally accepted assertion to the contrary, which was lent credence by the fact that the European banks showed less interest than the United States ones in seeking solutions to the debt problem.

nearly 60% of European international loans had been granted to industrialized countries, compared with less than 35% in the case of the United States banks (SELA, 1988). As a result, the European banking system's credits to Latin America have gone down to less than 8% of its total loans, although Spain and the United Kingdom still have relatively high commitments with that region.

The European governments maintain that direct responsibility with regard to the debt lies with the commercial banks, the debtor countries and the multilateral agencies. They also consider that their contribution to relieving the problem should be an indirect one, preferably through the reactivation of their economies and imports. Some European countries (especially France, the United Kingdom and Belgium), however, have played a leading role in the initiatives at the Venice (1987) and Toronto (1988) summits aimed at seeking to relieve somewhat the external debt burden of the less advanced countries.

The Commission of the European Communities, for its part, has taken a more flexible attitude to the external debt problem. It has accepted that the problem is of a political nature, and in 1985 and 1986 it acted as interlocutor with the Cartagena Agreement (which groups together 11 Latin American countries) in a dialogue aimed at reaching a global approximation that could serve as a basis for recommending initiatives in specialized forums. Despite the support of the European Parliament, however, the Commission's efforts to forge a common European position and keep up a political dialogue with the debtor countries of Latin America were frustrated by lack of support from its member countries and the fact that the Commission did not have direct competence in this area.

The Commission's competence on this matter is only indirect, being limited to the repercussions caused by the debt problem on its level of trade. In this respect, it has been estimated that over a million jobs have been lost in the EEC because of the drop in European exports to the heavily indebted developing countries and that half of this loss may be attributed to the decline in Latin America's imports because of the application of adjustment policies in the countries of the region (IRELA, 1987, p. 21).

All in all, Europe's participation in the search

for ways to relieve the Latin American external debt problem has not been very significant, and it seems unlikely that there will be a substantial flow of voluntary loans from Europe 1992 to Latin America. At the same time, the opening up of Eastern Europe and the political and economic interests of the EEC in that area give grounds for expecting that it will be competing with Latin America as a recipient of financial resources.

3. *The EEC and its direct foreign investment in Latin America*

In recent years, world flows of direct foreign investment have increased substantially, due basically to the improvement which has taken place in the world economy. However, they have continued to go primarily to the developed countries.

If we look at the countries which have received flows of direct foreign investment, we see that there has been a notable increase in the share of the developed countries and a sharp reduction in that corresponding to the developing countries (CTC, 1989). Between 1981 and 1983, the first-named countries received an average of 72.5% of the total amounts, while in the period 1984-1987 this figure went up to 78.8%, the increase being basically absorbed by the United States, which has come to receive nearly 45% of the total world value of these flows. The relative importance of the developing countries as recipients of direct foreign investment, however, has gone down from an annual average of 27% in 1981-1983 to 21% in 1984-1987, due *inter alia* to the fact that many of these economies have faced extremely serious constraints.⁵

An analysis by regions indicates that Africa and West Asia maintained their share of direct foreign investment flows in general terms in the 1980s, with levels of 3% and 1%, respectively. Southeast Asia's relative share went down from 11% in 1981-1983 to 9% in 1984-1987, and the same thing occurred in Latin America and the Caribbean, whose share fell from 13% to 8% be-

⁵ It should be noted that only in 1987 did the absolute value of the flows of direct foreign investment to the developing countries recover and exceed the level achieved in 1981.

tween the two periods in question. This latter region suffered the biggest decline in its share as a recipient of direct foreign investment, with the average annual value of these investment flows going down in absolute terms from US\$ 6.1 billion in 1981-1983 to US\$ 5.8 billion in 1984-1987.

Between 1967 and 1988, the share of direct foreign investment from the Community in the total flow to Latin America grew from 23% to 28%.⁶ This increase is not very significant if it is compared with the growth in the Community's share of the total world value of direct foreign investment (which went up from 40.2% in 1967 to 51.2% in 1987). This lag in Latin America's share raises the question of the need to analyse what relative importance Latin America will have for the EEC in the light of the Single European Market of 1992 and the opening up of Eastern Europe.

4. The EEC and its official development aid to Latin America

In the sphere of financial co-operation, the Community as a whole is the main world source of official development aid, with the United States and Japan occupying second and third place, respectively. The Community's share in the world total of this aid rose from 32.7% in 1970-1971 to 35.3% in 1986-1987.

Leaving aside the bilateral contributions which member countries make of their own accord, the Community's development co-operation (the origin of which goes back to the Treaty setting up the Community) has basically been oriented towards the developing countries or regions which are associated with it and with which it has maintained a specially privileged relationship: that is to say, the signatory countries of the Lomé Agreement, and some other nations located in the southern and eastern Mediterranean.

In fact, it was only 30 years after its establishment that the Community decided to extend its official aid to developing countries which were not formally associated with it. Only in 1976 did it begin to channel this aid, on an experimental

basis, to the developing countries of Asia and Latin America, which do not receive a very significant proportion of the total Community contribution. Thus, the Community's contribution to Asia and Latin America in 1976-1988 came to nearly US\$ 4.5 billion, of which Latin America only received 25%. Africa, for its part, received over 50% of the Community's official development aid, whereas South America only received 4.8% of it.

Thus, Latin America only gained access to these benefits at a late stage, and the amounts it has managed to obtain are not very significant, not only compared with the developing regions that have preferential relations with the EEC, but also compared with other areas which are not formally associated with the Community. The reasons behind this attitude of the Community are, on the one hand, the fact that the EEC sees Latin America as a region at an intermediate level of development, while on the other the Latin American countries are felt to be in an area that is clearly linked with the United States.

5. Bilateral and subregional agreements between the EEC and Latin America

There are two types of co-operation agreements between the EEC and Latin America. On the one hand, there are those which the Community has signed with various subregions of Latin America because of the Community's interest in establishing agreements with groups of countries considered to be relatively similar. Two such agreements are currently in effect: one with the Andean Pact and the other with the Central American countries. In addition, the EEC has signed individual co-operation agreements with three Latin American countries: Brazil, Mexico and Uruguay. All the above agreements are more along the lines of framework agreements, since they do not contain specific commitments, even with regard to technological collaboration, but serve rather as basis for dialogue to stimulate economic co-operation.

These agreements have not fully satisfied Latin American expectations, since their effects have been restricted by the limited instruments and resources available to the Community with respect to countries which are not associated with it. In particular, the agreements signed with the

⁶ Data obtained directly from the Joint ECLAC/CTC Transnational Corporations Unit.

Latin American countries do not contain financial protocols, in contrast with the agreements in

effect between the EEC and the Mediterranean countries, for example.

II

The economic effects of Europe 1992 on Latin America

1. *Potential benefits of the Single European Market for the EEC*

In order to obtain quantitative appraisals of the economic benefits that the Single European Market could bring, the Commission of the European Communities requested, *inter alia*, a study under the general direction of Paolo Cecchini, a former official of the Commission, which was published in summary form in 1988 in a volume known as the Cecchini Report.

It is concluded from the analysis that the elimination of physical, technical and fiscal frontiers referred to earlier will lead businessmen to reduce both their prices and their production costs, as they will be facing the pressure of much wider competition. This drop in prices, in turn, will stimulate demand, so that there will be an increase in production, which will lead to further cost reductions thanks to economies of scale. Benefits are also expected through the use of new trade strategies and the improvement of the efficiency of enterprises through the introduction of technological innovations and new production processes, all stimulated by the dynamics inherent in the internal market.

In particular, the Cecchini Report quantified the effects of the reduction of obstacles with respect to customs procedures, government purchases and financial services. It considered that the biggest benefits would come from the liberalization of the latter market, which it is hoped will lead to the transfer of the lower costs of financial services to the economy as a whole, thus reducing prices and increasing demand and production, while at the same time the favourable effects would lead to increased investment in response to the lower cost of credit.

According to the report, the above factors

would generate a 4.5% increase in the gross domestic product, the creation of 1.8 million new jobs, and a reduction of 6.1% in consumer prices. The public sector balance would improve by the equivalent of 2.2% of the gross domestic product, since tax revenue would rise because of the increase in the product, while expenditure would go down because the keener competition on the market would bring down the prices of the goods purchased by the public sector. The greater competitiveness of exports would raise the Community's current account balance with the rest of the world (which at present is more or less balanced in global terms) by the equivalent of 1% of the gross domestic product. These benefits would take place on a one-time basis and would be obtained in the medium term, four or five years after the integration programme was completed, that is to say, around 1997.

According to the Cecchini Report, if the governments of the EEC countries adopt more expansionary fiscal policies and spend the whole of the increase registered in the public sector balance, then the medium-term increase in the gross domestic product would rise from 4.5% to around 7%, the number of new jobs would be close to five million, the public sector budget would remain in its present state, prices would fall by nearly 4.5%, and the current account of the Community would register a deficit equivalent to 0.5% of the gross domestic product.

Arguments have also been put forward pointing to the positive effects which Europe 1992 could have on the economy of the rest of the world. These arguments are considered below, more in terms of hypotheses than concrete analyses, since this is a topic which has not yet been fully dealt with and does not permit categorical conclusions.

2. *The possible favourable economic impact of Europe 1992 on the rest of the world*

The Community has declared that the Single European Market will represent an important step forward in the search for greater deregulation and liberalization of international trade. In its view, Europe 1992 will not be an economic fortress but a trading venture. This optimistic outlook assumes that a regional free trade agreement can be a key element in the construction of a broader and more multilateral international trade system.

One of the main arguments put forward is that if the integration of the European market produces the expected high growth rates in the economies of the Community, then the corresponding increase in income could be reflected in a higher level of imports, which would boost international trade flows and raise economic activity in the rest of the world, since the Community is the developed region which is most open to international trade.

This same line of analysis maintains that protectionist pressures in the Community will be reduced, both because of the expected increase in the economic growth rate (close to 7% in the most favourable option) and through the generation of five million new jobs that such growth would bring about. Such pressures would also tend to go down because European firms would improve their efficiency as they were able to take advantage of economies of scale.

Latin America could benefit from the higher level of imports of the EEC only if its export structure is in line with the real needs of the European market and if its export products are able to compete in terms of price and quality both with the rest of the world and with the more efficient European production.

One element which strengthens the argument for the reduction of protectionism by the Community against imports from the rest of the world is of an institutional nature. It is expected that the qualified vote introduced by the Single European Act will eliminate an important factor favouring protectionism, which is often demanded by the weaker nations, regions or sectors in order to cope with external competition.

Another favourable aspect would be the lower rate of inflation brought about by integra-

tion of the Community's market. It may be recalled that the Cecchini Report foresees a reduction in consumer prices, which could lead to lower interest rates if the inflationary expectations of the economic agents go down too. The possible reduction of international interest rates would particularly benefit the countries of Latin America, because of their high level of external indebtedness.

Moreover, if the EEC lowers the prices of its exports, the rest of the world would benefit both through more favourable conditions in their trade with the Community and through the benefits obtained from a more competitive international environment in which the United States and Japan would have to respond by reducing the prices of their exports in order to face up to possible improvements in production efficiency in the EEC.

Another effect of the restructuring of the Community scheme would derive from the possibility that in an as yet undetermined length of time the Community will have a single currency in which it will carry out all its transactions. This would be positive for two reasons: firstly, because it would reduce the number of international currencies, since in practice 11 of them would disappear, and secondly, because the European Currency Unit would become a third reserve currency (together with the US dollar and the Yen), thus facilitating the co-ordination of macroeconomic policies among the main industrialized countries.

Furthermore, it may be assumed that the Single European Market will involve the reassignment of the EEC's budget, diverting financial resources from the biggest item of expenditure—the Common Agricultural Policy (CAP)—to research and development and to support for the regions of Europe most seriously affected by the need to adjust their economies to meet the new requirements for higher competitiveness.

The foregoing, together with the pressures exerted by many countries in GATT to try to get the EEC to agree to liberalize trade in agricultural products, and the voices in Europe which point out the inefficiency of maintaining a Common Agricultural Policy like the present one, make the modification of the latter seem inevitable. Indeed, the EEC understands that further progress in the reform of this policy which was begun

in 1984 is an element that must be taken into account for the consolidation of the Single European Market.

This matter has significant international projections. The liberalization of world markets for agricultural products and the elimination of all types of support for their production, which is expected to take place gradually, will be an important stimulus for those countries (particularly developing nations) which have certain comparative advantages in the production of such goods.

3. Critical appraisal of the Cecchini Report

Probably the most important criticism levelled at the Cecchini Report is that its projections of the economic benefits which the Community would obtain by integrating its markets are based only on the most favourable scenarios. It may be noted by way of illustration that according to one estimate (Peck, 1989, p. 21) the benefits could possibly amount to an increase of only 2% of the gross domestic product, instead of the rise of between 4.3% and 6.4% projected in the report.

Moreover, the Cecchini Report does not deal in depth with the economic adjustment that must necessarily take place in the nations of the Community, its intensity and duration, or the adverse effects it could have with regard to unemployment. In principle, certain enterprises in some countries of the EEC could suffer losses by being exposed to more intensive competition. Indeed, most of the benefits to be obtained by taking advantage of economies of scale would come from a restructuring process which would cause a by no means insignificant proportion of the enterprises of the Community to disappear.

According to a study by Smith and Venables (1988), the number of enterprises would go down in all branches of industry except cement and office machines. The most extreme case would be that of the footwear industry, where 207 of the 739 firms existing in the Community would disappear. Some countries would bear a particularly large proportion of these costs: for example, the United Kingdom would lose 46 of its 65 footwear companies, 31 of its 52 carpet companies, and one of its three motor vehicle firms.

Moreover, the problem of unemployment will probably become more critical in the short term, possibly causing serious social and political

pressures for the restoration of the previous levels of protection or demands that governments should bear the costs of the liberalization process. This would be reflected in higher expenditure on unemployment benefit or in the application of an expansionary fiscal policy which the public sector would have to finance through indebtedness with the private sector, thus possibly generating upward pressures on interest rates.

Finally, the success of the Community project will depend on the political will of the governments to accept a position which goes beyond national interests in certain matters: something that will not be easy to manage, since the benefits of the unification process will not be equitably distributed.

4. A different view of Europe 1992

Although from the European point of view the Single European Market is seen as a great movement towards deregulation and economic liberalization, some sectors in the rest of the world see it rather as an attempt to erect a fortress which will prevent the improvement and further development of economic relations with the EEC.

Thus, various economic interest groups, especially in the United States and Japan, fear that the intra-Community restrictions adopted will later be transferred to the exterior. In their view, the Single European Market will defend the Common Market from external competition: the process of deregulation will cause internal imbalances which will increase unemployment and produce still wider gaps between the different regions of the EEC, leading to social problems and the resurgence of national or local feelings which will finally be reflected in an increase in protectionism by the Community.

The question, then, is what will happen as from 1992 with regard to the protection which the EEC applies against imports from the rest of the world. In answering this question, it is necessary to single out at least two of the elements which make up the concept of protectionism. The first of these is the common tariff rate, regarding which it is necessary to see if the new levels correspond or not to the weighted average of the levels currently prevailing in each of the countries. The second point is that of non-tariff barriers, regarding which it is important to know

the rules and requirements which the EEC is likely to impose on imports.

With regard to tariffs, there are some points of concern, since when the EEC was set up, the industrial tariffs were averaged on an arithmetical basis, whereas those applied to the agricultural sector were raised in line with the Common Agricultural Policy. When Spain entered the EEC, its industrial tariffs were reduced, but its agricultural protection went up. These two situations gave rise to intensive negotiations both inside and outside GATT. The final decision was not very clear, even though this body lays down that in both customs unions and free trade areas, the level of protection against non-member countries should not be higher than that existing when these unions were set up (GATT, 1948, article XXIV).

Another element which might tend to back up the theory of "fortress Europe" is the extraordinary growth registered in intra-Community trade. This grew from 48% in 1963 to nearly 60% of total Community trade today. Even so, however, it would appear that this increase — achieved to some extent at the expense of extra-Community trade — is not yet considered sufficient. Various European studies maintain that the current imports from outside the Community should be at least partially replaced by products of the EEC itself.

With regard to non-tariff protection, it may be noted that the harmonization of the trade regulations of the EEC does contain a positive element for the rest of the world. Thus, it will be easier and less costly and risky to deal with the countries of the Community on the basis of a single system of trade and economic rules and requirements, instead of negotiating individually with each of the 12 nations which now make up this integration scheme.

However, this harmonization will also have some negative effects for certain developing countries, since the trade preferences which some member countries of the Community have granted to certain developing nations will gradually be eliminated. As from 1993, these preferences will come under a common scheme to be decided by the EEC itself.

With regard to this point, it may be noted that the Community will have still more power to perfect its arsenal of import restriction meas-

ures, such as reciprocity agreements, anti-dumping mechanisms, and the new trade policy instrument⁷; these measures have been severely criticized by the rest of the world and have been accused of lacking transparency. Moreover, the preferences of European consumers are increasingly inclined towards high quality products whose technical specifications safeguard health and the environment. This attitude could serve to legitimize the application of more sophisticated trade regulations by the Commission, which would thus try to satisfy the new demands of consumers, who represent the ultimate political support for the integration scheme.

At the same time, European producers are deploying all their influence in order to make the Commission adopt greater protectionist measures. A substantial proportion of businessmen in the Community are already producing goods which are in line with the new quality standards demanded by European consumers, so that they are in a position of relative advantage *vis-à-vis* foreign competition.

In view of the foregoing, it is reasonable to expect an increase in the number and a certain hardening in the nature of non-tariff measures, rather than a general rise in tariff rates, in order to provide temporary and selective protection for certain industries which have to adapt themselves to greater external competition within the Community, at least in such key sectors as electronics and informatics.

At all events, United States and Japanese firms plan to get inside the Community's space as soon as possible, as a strategic way of avoiding conflicts which could arise with the possible increase in trade protectionism. Thus, the EEC is receiving a growing proportion of world direct foreign investment (CTC, 1989). Between 1981 and 1983, 15% of United States direct foreign investment went to the EEC, while between 1984 and 1987, the figure rose to 55%. Between the same years, the figures for Japan rose from 10% to 17%.

⁷ This instrument enables private businessmen of the Community to approach the Commission directly in order to request protective measures against imports that they claim are using "unfair trade practices".

5. *The relative importance of Latin America for the European Economic Community*

a) *The EEC and the industrialized countries*

Two recent phenomena have once again placed the European Continent at the centre of world attention. The first of these is the further development of the Community's integration scheme, with the probable incorporation into it of the countries which currently make up EFTA. The second phenomenon is related to the processes of political and economic reform which are underway in almost all the Eastern European countries and the redefinition of the political and economic links between those countries and the EEC.

This indicates that Europe is moving towards substantial changes in its political and economic relations, and the EEC is undoubtedly a leading actor in this process. The Community plays the role of the binding factor between the various countries of the Continent, in order to bring into effect the old idea of a unified Europe. For this reason, the EEC attaches high priority to its economic and political relations both with the six countries which currently make up EFTA (Switzerland, Austria, Sweden, Norway, Finland and Iceland) and with the Eastern European nations.

As already noted, the EFTA countries are not only the main trading partners of the EEC but have also been steadily increasing their economic links since the creation of a free trade area between the two groups in 1973. More recently, in June 1990, formal negotiations were begun between these two blocs of countries with a view to establishing a common economic space with free circulation of goods, services, labour and capital. This gives grounds for thinking that further EFTA countries could also request their formal incorporation into the EEC, following the example of Austria, which formally applied to do this in 1989. Such an expansion would not raise serious economic difficulties, since the levels of development of the EFTA countries are equal or superior to the Community average.

The EEC's current position in this respect is clear. In June 1990, a high official of the Commission said that the Community had chosen to deepen its activities rather than expand them:

only after 1992, once it had achieved a better definition of itself, would it begin negotiations with the European countries which had applied to join it. Meanwhile, the EEC was negotiating with the EFTA countries to create a common economic space with them.⁸

With regard to the Eastern European countries, the momentous political changes which have been observed in them recently have also been reflected in the economic sphere, where the reforms are oriented basically towards the establishment of private ownership of the means of production and the fixing of prices through the market mechanisms.

Although the Western countries view the reforms applied in Eastern Europe with a certain amount of caution, it may be asserted that generally speaking they have shown great interest in these processes. Both the Group of Seven and the Organization for Economic Co-operation and Development (OECD) have referred on various occasions to the need to encourage the economic reform processes taking place in Eastern Europe, in order that these countries may be fully integrated into the world economy. Notwithstanding the great interest displayed by these two bodies and their possibility of establishing direct agreements in order to tighten their economic links with the Eastern European countries, both of them recognize that in this respect the EEC has a particularly privileged status because of the specific nature of its relations with these countries. It may be noted, for example, that at the Summit Meeting of the Seven, held in July 1989 in Paris, the EEC was given responsibility for co-ordinating the aid to be provided by the 24 OECD countries to Hungary and Poland in order to support the efforts of the latter countries to transform their economies.

In addition to the financial aid which the most highly developed Western countries plan to give to Eastern Europe, the Community's budget also provides for credits totalling nearly US\$ 3 billion to assist in the economic reconstruction of this area between 1990 and 1992. The Community has also granted a structural adjustment

⁸ From the statement delivered by Mr. Vittorino Allocco, Head of the Commission's Office in Chile, on 5 June 1990 in the Catholic University of Chile.

loan to Hungary in the amount of US\$ 1 billion and food aid to Poland in the amount of US\$ 256 million.

Furthermore, all the Eastern European countries which adopt economic reforms designed to promote the functioning of the market forces can take advantage of credits from the European Bank for the Reconstruction and Development of Eastern Europe, which the EEC proposes to set up with capital of nearly US\$ 13 billion.

This financial assistance has been complemented with a set of trade liberalization measures designed to reduce tariffs and eliminate non-tariff barriers affecting the EEC's imports from the Eastern European countries. In addition, certain exports from some countries of the area, such as Hungary and Poland, can take advantage of the EEC's Generalized System of Preferences: a benefit which was subsequently also made available by other OECD countries. Likewise, after Czechoslovakia had already done so, Bulgaria and Romania were able to take advantage of the EEC's most-favoured-nation clause and they were also able to do so in some other OECD countries.

The foregoing undoubtedly points to still closer trade relations between Western and Eastern Europe, which are already closer than the links between the latter area and the rest of the western world. Nearly 8% of the EEC's imports from outside the Community come from Eastern Europe: a percentage which is notably higher than the latter area's share in the imports of the United States (around 1%) and Japan (nearly 2%). Likewise, nearly 70% of Eastern Europe's exports of goods to OECD countries go to the EEC.

The reunification of Germany will undoubtedly lead to closer and deeper economic and political links between Eastern and Western Europe. Within this same context is the fact that Hungary wishes to enter the EEC as a full or associate member. Likewise, the President of Czechoslovakia has spoken of a "Central European" unit, with historical, cultural, political and economic links.

In this connection, a high official of the Commission said that the EEC was studying the possibility of transforming the co-operation agreements linking the Community with the Eastern European countries into true agreements of association, with institutional organs to ensure po-

litical and economic co-ordination with them: a challenge which amounted ultimately to uniting the whole of the Old World around the same ideals in order to convert it into a vast area devoted to the pursuit of peace and freedom.⁹

The foregoing shows that the Eastern European countries are of enormous interest to the EEC and will be competing with Latin America for loans, development aid, trade facilities, and direct foreign investment.

Within the industrialized world that lies outside the limits of Europe, the Community has shown special interest in economic relations with the non-European member countries of OECD. It maintains close links with them in the areas of trade and finance as well as direct foreign investment, and in fact the United States is the Community's main trading partner within an overall scheme in which Japan is also a key element.

b) *The EEC and the developing countries*

Within the developing world, the EEC has great interest in its links with the Mediterranean countries: it has signed association or co-operation agreements with 12 of them as part of a global policy aimed at furthering the economic development of these countries and promoting mutual trade.

With regard to the Northern Mediterranean countries, the EEC grants customs concessions in respect of most of the industrial products sold by Yugoslavia, which has also obtained loans from the European Investment Bank in an amount of over US\$ 700 million over the last five years. The EEC has also established special agreements with Turkey, Cyprus and Malta, whereby the industrial exports of those countries can enter the EEC without paying customs duties and without any limitation on volume, while concessions have also been made in respect of various agricultural products. Turkey, Cyprus and Malta have all officially applied to join the EEC.

In the case of the eight Southern Mediterranean countries, the EEC has signed agreements

⁹ Address delivered by Mr. Vittorino Alocco, Head of the Commission's Office in Chile, on 5 June 1990 in the Catholic University of Chile.

on trade, industrial, technical and financial co-operation with all of them, whereby the industrial products of these countries have free access to the Community market, while specific concessions have also been granted for some agricultural products and financial assistance in the amount of US\$ 2 billion has been provided over the period 1986-1991. Special mention may be made of the close economic links which the EEC has with Morocco, which has also applied to join the Community.

The EEC also shows keen political and economic interest in the Arab nations of the Persian Gulf, due especially to its dependence on that region of the world for energy resources. Specifically, it is seeking to expand the existing trade agreements to cover trade collaboration, transfer of technology, investment incentives, agricultural development, and other matters connected with development co-operation.

There are also the 66 African, Caribbean and Pacific (ACP) countries which are signatories of the Lomé Agreement. These are mostly ex-colonies of European countries, with which the EEC maintains especially privileged relations. Thus, with regard to trade, almost all the ACP countries' exports to the EEC can enter the Community free of all customs duties, and the Community has even granted preferences in respect of products which compete with its own agricultural sector (for example, sugar).

An integral part of this Agreement is the "Stabex" fund, which is designed to guarantee the income from exports of basic commodities by the ACP countries to the Community. Another similar system called "Sysmin" finances the maintenance and repair of mining installations, as well as economic reconversion when the mining potential of the ACP countries is seriously affected by unforeseeable circumstances.

In addition to these support elements, the range of co-operation instruments used by the Community in its relations with the ACP countries includes many other facilities. Financial and technical co-operation to those countries amounted to US\$ 10 billion between 1985 and 1990 and was directed, *inter alia*, to rural and agricultural development, industrialization, economic infrastructure, social development, small and medium-sized enterprises, telecommunications, ports and water supplies.

These agreements are renewed every five years: the latest of them, known as Lomé IV, was signed in February 1990 and will run until 1995. The negotiation process which culminated in that agreement was different from the three preceding ones, since the original financial demands of the ACP countries were almost 53% higher than the amount offered by the Community. These countries considered that the effects of the structural adjustment processes on unemployment and public expenditure, plus the drop in the prices of some of their most important export commodities and their external debt burden, meant that the Community should reappraise its relationship and co-operation with them, particularly in financial matters but also in the area of trade.

Finally, reference should be made to the Asian developing countries which are not members of the Lomé Agreement and the Latin American countries. From the Community's viewpoint—because of their low level of per capita income—the EEC gives the former priority over the latter, especially with regard to development assistance and co-operation.

c) *The EEC and Latin America*

It may thus be seen that Latin America has not only lagged behind in its economic relations with the EEC, but has also not received priority in the Community's scheme of regional or geographical economic preferences. This situation contrasts sharply with the much closer political relations established between the two regions and the hope of even closer contacts when Spain and Portugal join the Community.

Since the EEC does not assign great economic importance to Latin America, the latter region may be more seriously affected than the rest of the world if the economic effects of Europe 1992 turn out to be negative for the countries outside the Community. On the other hand, if those effects are positive, Latin America will still not benefit from them as much as the rest of the world, be it developed or developing, western or eastern.

Consequently, in order to cope with the situation raised by the Single European Market, Latin America must understand that it forms part of a broader context of profound changes in the international economic system and that

the great challenge this raises must be faced through regional as well as national efforts.

6. Some action guidelines

Everything indicates that in the medium term the process being carried out by the Community will lead to the improvement of its levels of production efficiency, with similar responses from the traditional industrialized countries and the countries of recent industrialization. It may therefore be expected that in the future international economic relations will be increasingly competitive. This future situation raises important challenges, but also offers opportunities which must be exploited. Some general guidelines for Latin America's action in this respect are outlined below:

i) It is essential to ensure that Latin America's new insertion in the international economy is in keeping with the new and dynamic changes in the structure of world demand. It is vital to make profound changes in the production of both goods and services in order to be able to respond in a competitive manner to the current international demands. This will only be possible through a process of changing production patterns with social equity¹⁰ which seeks to raise productivity, improve the efficiency of all factors of production, and increase the added value of exports.

ii) It is necessary to resume the path towards regional economic integration with renewed approaches having real, solid bases: a task which must be tackled in a manner that goes beyond the mere search for a geographical space which facilitates exports to third markets. Latin American integration must also be directed towards the configuration of a scheme which makes possible regional co-ordination and consensus-building in order to improve Latin America's

bargaining position both with the international finance agencies and *vis-a-vis* the great blocs of countries which are now acting jointly.

iii) With regard to the EEC, Latin America must seek, through its negotiating position, to raise its economic relations with the Community to a level similar to that existing in the political sphere. It should be noted in this respect that the argument put forward for decades by the EEC in justification of the low profile of the economic relations between the two regions has been "the absence of a valid interlocutor representing Latin America's point of view". Clearly, it is the responsibility of the region to demolish that argument, and the only way to do so is by speaking with a single voice.

iv) With regard to the bilateral economic co-operation agreements between the Community and Latin American countries, the existing agreements with Brazil, Mexico and Uruguay must be further developed and it is essential to create suitable conditions for the establishment of similar agreements with as many Latin American nations as possible, in order to develop and improve the economic links between the two regions in all possible fields.

v) Efforts must be made to establish Latin American enterprises within the Community, as a means of ensuring the marketing of the region's goods or services in that area. Consideration could also be given to the possibility of arriving at joint production agreements with EEC enterprises within the territory of the Community, which would enable Latin American enterprises to take part in European public sector tenders, where a certain minimum local content of products is required.

vi) In the financial field, Latin America should seek forms of finance different from those already existing in the Community, by offering realistic and stable incentives for foreign investment from the various member countries of the EEC. The investment projects thus agreed upon could well be accompanied by additional "voluntary" loans.

¹⁰ ECLAC has dealt at length with the issue of changing production patterns with social equity, which is one of its main concerns (see ECLAC, 1990a).

Bibliography

- CEC (Commission of the European Communities) (1973), *Treaties Establishing the European Communities*, Luxembourg.
- _____ (1985), *Etapas de Europa*, Luxembourg.
- _____ (1986), *Un viaje a través de Europa*, Luxembourg.
- _____ (1987a), *European Economy*, No. 34, Brussels, November.
- _____ (1987b), *Treaties Establishing the European Communities*, Abridged Edition, Luxembourg.
- _____ (1988a), *European Economy*, No. 38, Brussels, November.
- _____ (1988b), *Bulletin of the European Communities*, vol. 21, No. 10, Luxembourg.
- _____ (1988c), *Bulletin of the European Communities*, vol. 21, Nos. 7/8, Luxembourg.
- _____ (1988d), *Bulletin of the European Communities*, vol. 21, No. 9, Luxembourg.
- _____ (1988e), *La realización del mercado interior: un espacio sin fronteras*, Report on the status of the work called for in Article 8B of the Treaty, Brussels.
- _____ (1989a), *European Economy*, No. 39, Brussels, March.
- _____ (1989b), *European Economy*, No. 40, Brussels, May.
- _____ (1989c), *Trece años de cooperación al desarrollo con los PVD de Asia y de América Latina: datos y resultados de la experiencia*, Ten-yearly report, Brussels.
- _____ (1989d), *La aplicación de la ayuda financiera y técnica en favor de los países en vías de desarrollo de América Latina y Asia*, Eleventh report of the Commission to the Council and the European Parliament, Brussels.
- _____ (1989e), *Bulletin of the European Communities*, vol. 22, No. 6, Luxembourg.
- _____ (1989f), *Bulletin of the European Communities*, vol. 22, Nos. 7/8, Luxembourg.
- CTC (United Nations Centre on Transnational Corporations) (1989), *The CTC Reporter*, No. 27, New York, Spring.
- Dornbusch, Rudiger (1989), Europe 1992: macroeconomic implications, *Brookings Papers on Economic Activity*, No. 2, Washington, D.C., The Brookings Institution.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1989), *Transnational Bank Behaviour and the International Debt Crisis (LC/G.1553/Rev.1-P)*, "Estudios e Informes de la CEPAL" series, No. 76, Santiago, Chile. United Nations publication, Sales No.: E.89.II.G.12.
- _____ (1990a), *Changing Production Patterns with Social Equity (LC/G.1601-P)*, Santiago, Chile, March. United Nations publication, Sales No.: E.90.II.G.6.
- _____ (1990b), *Latin America and the Caribbean: Options to Reduce the Debt Burden (LC/G.1605-P)*, Santiago, Chile, March. United Nations publication, Sales No.: E.90.II.G.7.
- Fieleke, Norman (1989), Europa 1992, *Perspectivas económicas*, No. 69, Washington, D.C., United States Information Agency.
- GATT (General Agreement on Tariffs and Trade) (1948), Geneva.
- Grabendorff, Wolf (1989), Las relaciones de la Comunidad Europea con América Latina: una política sin ilusiones, *Integración Latinoamericana*, No. 144, Buenos Aires, Institute for Latin American Integration (INTAL), April.
- Harbek, Rudolf (1987), *El impacto de la Comunidad Europea en las políticas exteriores de los países miembros, la formación de la política exterior: los países desarrollados y América Latina*, Buenos Aires, Programme of Joint Studies on the International Relations of Latin America (RIAL), Grupo Editor Latinoamericano.
- Iglesias, Enrique (1987), Nuevas formas de cooperación entre la Comunidad Económica Europea y América Latina, *Estudios internacionales*, año XX, No. 79, Santiago, Chile, RIAL, July-September.
- Instituto de Estudios Económicos (1988), Los efectos del Mercado Unico Europeo, *Revista del Instituto de Estudios Económicos*, No. 4, Madrid.
- IRELA (Institute for European-Latin American Relations) (1987), *Europa occidental y la deuda externa de América Latina*, Dossier No. 11, Madrid, June.
- _____ (1989a), *Relaciones entre la Comunidad Europea y América Latina: balance y perspectivas*, basic document, Madrid, mimeo.
- _____ (1989b), *América Latina y Europa en los 90: ¿hacia una nueva relación?*, Conference Report No. 3, Madrid.
- Julienne, Hubert (1987), *Cooperación económica entre la Comunidad Europea y América Latina: posibilidades y opciones*, Working Document No. 4, Madrid, IRELA.
- Koopmann, G. and H. Scharrer (1989), 'Fortress Europe'-an illusion or a real danger?, *Intereconomics*, vol. 24, No. 5, Hamburg, Verlag Weltarchiv GmbH, September-October.
- OECD (Organization for Economic Co-operation and Development) (1988), *Development Co-operation*, Paris.
- _____ (1989), *Development Co-operation*, Paris.
- Peck, Merton J. (1989), Industrial organization and the gains from Europe 1992, *Brookings Papers on Economic Activity*, No. 2, Washington, D.C., The Brookings Institution.
- SELA (Latin American Economic System) (1988), *La situación económica de la Comunidad Económica Europea (CEE) y sus relaciones con América Latina y el Caribe (SP/CL/XIV.0/Di)*, No. 11, Caracas.
- _____ (1989), *Documento del grupo latinoamericano en Bruselas: informe sobre las relaciones entre América Latina y la Comunidad Europea (período 1988-1989) (SP/CL/XV.0/Di)*, No. 12, Caracas.
- Smith, Alasdair and Anthony Venables (1988), An assessment based on a formal model of imperfect competition and economies of scale, *Research on the "Cost of Non-Europe"*, *Basic Findings*, vol. 2, Luxembourg, Office for Official Publications of the European Communities.
- Viñals, José (1988), *El sistema monetario europeo. España y la política macroeconómica*, Working Document No. 8804, Madrid, Banco de España, Servicio de Estudios.

The competitiveness of the small economies of the region

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This article explores the changes in sources of competitiveness in the exports of small countries to the industrialized market economies between 1978 and 1988.

The crisis of the 1980s hit the small countries of Latin America severely, and their development prospects became closely related to their pattern of insertion in international markets. Important transformations are taking place, reflected for example in the upsurge of non-traditional exports.

The analysis of the items that registered export growth to the OECD countries between 1978 and 1988 reveals that unprocessed natural resources and the use of unskilled and cheap labour account for most of this growth. Nevertheless, a considerable number of items where the increase in exports was based on more diversified sources of competitiveness, including the incorporation of science and technology, can be identified. These include products that make use of natural resources or cheap labour but fortify their competitive position through marketing strategies of product differentiation; in addition, some examples can be found of manufactured exports linked to available natural resources.

The purpose of this article is to contribute to the analysis of the specific conditions that small countries must face when transforming their insertion in world markets. Whereas in large and medium-sized countries of the region considerable consensus exists regarding the superiority of outward-oriented development strategies that emphasize competitiveness on the basis of technical progress and human resources development, the prospects for this type of development strategy in small countries seem to be a matter of debate and require further specific analysis. The article comes to the following conclusion: there are examples in the experience of the region which indicate that there are very sound reasons for seeking to promote the competitiveness and the sustainability of the development of small Latin American and Caribbean countries by taking advantage of their comparative advantages and applying science and technology in sectors whose competitiveness has hitherto been based on unprocessed natural resources or the use of cheap unskilled labour.

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Introduction

The widespread literature on the development of small nations usually identifies income, geographical area and population as the main determinants of whether they are considered small or not (Kuznets, 1960; Perkins and Syrquin, 1989). Size-related constraints on development are normally associated with small domestic markets and limited resources, identified with common patterns such as higher trade ratios and less diversification on the supply side. Econometric evidence points to population as a particularly significant determinant of trade structure and diversification patterns. Furthermore, size has also been considered to be an important limitation of developing countries' room to manoeuvre or to have policy options, which in turn tends to reinforce the constraints imposed by other variables such as ethnic divisions, location, limited natural resources, high consumer expectations and a narrow technological base (Seers, 1981). Ecological constraints resulting from a narrow resource base in highly populated small countries is also an issue of growing concern (Foy and Daly, 1989). However, size also seems to have operated as an important positive challenge leading to what has been called "democratic corporatism", allowing small Western European countries to combine political stability, social development and competitive open economies in order to adjust to a rapidly changing international economy (Katzenstein, 1985).

In the case of the small Latin American and Caribbean nations the crisis of the 1980s that shook Latin America in general seems to have induced significant processes of economic transformation involving increased exports of non-traditional products, in spite of its severe negative effects. A first objective of this paper is to identify some of the basic characteristics of this process. A second objective is to demonstrate that the competitiveness of increased exports has continued to be based mostly of these countries' relative endowments of unskilled labour and natural resources, subject to constraints of a technological or environmental nature. A third objective is to explore or analyze trends which may lead to identifying ways of favouring the development of new sources of competitiveness which, in accordance with ECLAC's recent proposal on "Changing Production Patterns with Social Equity" (ECLAC, 1990a), would involve not only traditional land

and labour factors of production but also a gradual absorption or use of technical progress, applied both to production and marketing.

Following Kuznets' seminal paper on small nations, an upper limit of 10 million (in 1988) was chosen as the determinant of those Latin American and Caribbean countries identified as small in this paper, while a lower limit of 1 million was established in order to exclude nations which are sometimes considered "microstates" and which have further specificities which differentiate them from slightly larger countries. After exclusion of the countries for which there are certain statistical data problems (Cuba and Panama), or where cases of increased exports are almost non-existent (Nicaragua), an analysis was undertaken of the evolution of the following twelve Latin American and Caribbean nations, consisting of four from the Caribbean: Trinidad and Tobago, Jamaica, Haiti and the Dominican Republic; four from Central America: Guatemala, El Salvador, Honduras and Costa Rica; and four from South America: Ecuador, Bolivia, Uruguay and Paraguay.

This paper analyses what appear to be the basic recent trends in small countries' participation in the international economy, taking the performance of their exports to OECD countries as an indicator of their competitiveness. To begin with, sources of competitiveness at the national level are considered (section I below), taking into account factor intensity of unskilled labour and natural resources. The next section (section II) then focuses on sources of competitiveness at the industry level, analyzing the growing complexity of new sources of competitiveness, including technological progress and industrial clustering.

The exercise uses import data registered in the OECD countries. This approach has the disadvantage that it does not necessarily provide a complete picture of the countries' competitiveness. However, these data, which are homogeneous and recent, give an uncompromising view of international competitiveness, unblurred by the effect of reciprocal Caribbean or Latin American trade preferences.¹ The analysis is based on the comparison between 1978 and 1988 import data of OECD countries.²

I

Sources of competitiveness at the national level

Considerable progress has been made in the conceptualization of sources of competitiveness. Dosi and Soete state that "revealed comparative advantages appear to be the *ex post* result of sector-specific and country-specific learning dynamics, and of the related international and intra-sectoral changes in competitiveness of firms and countries" (Dosi and Soete, 1988). According to Porter, the competitive advantage of nations would be determined by a "diamond" which involves the dynamic interaction of the factors of production, home demand, market structure and company strategy, and related and supporting industries (Porter, 1990).

In the case of small Latin American and Caribbean nations, the main and sometimes sole source of competitiveness of new exports would appear to be given by the relative availability of low-grade factors, including specifically unskil-

led labour and (constrained to a greater extent by limited geographical area) natural resources.³ Furthermore, the relative weakness of the other determinants of competitiveness, often affected negatively by the small size of these countries (particularly as regards competition, size of home

¹ This approach excludes any normative consideration of the effects of reciprocal trade preferences, as well as of the infant industry argument based on eventual exports to competitive markets after having access to preferential markets.

² These data are CIF and therefore not comparable with the FOB export data of the small countries themselves. Differences may also arise from timing of (export or import) registration and from treatment of free processing zones.

³ Including extremely fertile land, as on the Pacific coast of Central America, favourable climate and beaches as in the Caribbean, and minerals.

demand and the performance of supporting industries), has placed a heavy burden on the relative availability of traditional factors of production as the sole determinant of competitiveness. This, in turn, is linked to the relatively weak industrialization processes of the small Latin American and Caribbean nations in the past, which have limited their possibilities of advancing towards the constitution of a balanced "diamond".

In order to determine the relative factor intensities of those products with export growth in small Latin American and Caribbean countries during the 1978-1988 period, the total exports which increased during this period (XT) were broken down into exports of primary products based on unprocessed natural resources (NR), exports of labour-intensive industrial products (XIL), exports of industrial products intensive in processed natural resources (XINR) and exports of other industrial goods (XIO).⁴ First, the 3-digit SITC categories corresponding to total exports (XT) which grew during this period (what amounts to additional (marginal) exports) were added together.

The results are heterogeneous, as can be seen from table 1, with the highest relative increases taking place in the Dominican Republic (170.1%) and Costa Rica (110.0%), followed by Paraguay (105.8%) and Haiti (101.0%). Second, a distinction was made between industrial goods exports (manufactures and semimanufactures) and primary products (RN), while disaggregating industrial products into those which are relatively intensive in unskilled labour (XIL), those intensive in natural resources (XINR), and others (XIO), the latter presumably being intensive in capital or in technology.⁵

⁴ Arithmetically, $XT = NR + XIL + XINR + XIO$.

⁵ Primary products were defined as those corresponding to sections 0, 1, 2 and 3 of the SITC Rev. 2, and industrial products as those corresponding to sections 4 to 8. Exports of gold which corresponded to mining were included in the first group, but they were excluded if they were due to the sale of Central Bank reserves. Unskilled-labour-intensive chapters or groups were defined as those which had 10% lower wages than the average wage in the United States, using Hufbauer's information on wages per man. (See G.C. Hufbauer, "The Impact of National Characteristics and Technology on the Commodity Composition of Trade in Manufactured Goods", in R. Vernon, ed., *The Technology Factor in International Trade*, NBER, Columbia University Press,

Table 1
(MARGINAL) VALUE OF EXPORTS WHICH GREW
BETWEEN 1978 AND 1988^a
(Thousands of US\$ and %)

	Thous. US\$	% of 1978
Dominican Rep.	1 207.4	170.1
Costa Rica	784.8	110.0
Paraguay	320.5	105.8
Haiti	271.0	101.0
Ecuador	923.7	77.4
Uruguay	338.0	75.1
Honduras	418.4	68.2
Jamaica	337.6	44.9
Guatemala	264.4	31.2
El Salvador	86.9	18.7
Trinidad and Tobago	291.0	17.4
Bolivia	42.1	13.0

Source: Processed COMTRADE data (refer to OECD imports).

^a Value refers to difference between exports of 1978 and 1988. Percentage is this value as % of 1978 exports. Gold exports by Bolivia and Uruguay are excluded. Items in which exports increased were defined at the SITC Rev. 2 three-digit level.

The information presented in table 2 confirms that the expansion of exports in small Latin American and Caribbean nations relied predominantly on exports of labour-intensive industrial goods and on exports of natural-resource-based products with a limited degree of processing, with the important exception of Trinidad and Tobago. Given a small population, various patterns appear to emerge as a result of the different combinations of location, low labour costs, and natural resource availability, the latter being loosely connected with population density (excluding the cases of oil-producing Trinidad and Tobago and Ecuador).

The relation between the proportion of increased labour-intensive industrial exports (XIL

New York and London, 1970). Labour-intensive groups were considered to be 56, 61, 63, 65, 82, 83, 84, 85, and 89. After excluding labour-intensive groups, industrial products intensive in natural resources were those left in sections 4, 5 and 6, while "others" were those remaining in groups 7 and 8. Given the existence of footloose assembly operations in the machinery and electronic equipment sectors, groups 74 and 77 were also defined as labour-intensive.

Table 2
 INCREASED (1978-88) EXPORTS: FACTOR INTENSITY^a
 (Percentage of exported value)

	Primary	Industrial Products		
	Nat. Res.	Labour	Nat. Res.	Other
Paraguay	89.0	10.5	0.4	0.1
Bolivia	77.1	20.6	1.9	1.2
Ecuador	96.6	2.1	0.8	0.3
Jamaica	24.8	68.6	6.0	0.3
Dominican Rep.	34.2	62.3	3.3	0.2
El Salvador	34.7	57.6	6.8	0.9
Haiti	3.8	90.4	3.1	2.4
Guatemala	54.3	38.2	4.1	1.7
Honduras	80.0	17.5	1.9	1.0
Costa Rica	54.3	43.2	2.0	1.2
Uruguay	57.0	36.5	4.8	1.7
Trinidad and Tobago	23.1	11.3	65.1	0.5

Source: Processed on the basis of COMTRADE data.

^a See note ^a of table 3 below. See footnote 5 in text for classification method used.

as % of XT), population density and distance from the United States (Miami) of ten small Latin American and Caribbean countries can be seen in table 3. The results of a multiple regression, with an adequate and significant sign corresponding to the density coefficient and an adequate but statistically non-significant result corresponding to the distance variable, can be observed in the same table. These results imply that labour-intensive manufactured exports grew faster in those countries with higher population density, in accordance with what could be expected on the basis of the traditional theory of comparative advantage (Perkins and Syrquin, 1989).

In general, the small countries of South America which have a relatively larger area (Paraguay, Bolivia and Ecuador) relied to a greater extent on unprocessed natural resources. The smallest countries (Dominican Republic, Jamaica, Haiti and El Salvador), benefitting from their proximity to the United States market, exported a greater proportion of labour-intensive industrial products, largely as a result of the expansion of offshore assembly activities (see table 3). The relatively less developed small countries of Europe, such as Ireland and Portugal, exporting goods involving low-skill assembly jobs,

would appear to be in a similar position (Walsh, 1988).

Trinidad and Tobago, Costa Rica, Guatemala and Honduras would appear to be countries which share the advantages of favourable location and natural resource availability. The Central American countries still limit their industrial exports to OECD countries basically to unskilled-labour-intensive goods and to products involving limited processing of available natural resources, even though many are new exports. Only Trinidad and Tobago, taking advantage of its oil and capital, has developed industrial sectors based on greater local resource processing, which also tend to be capital-intensive.⁶ Uruguay, on the other hand, with an unfavourable location but with a relatively larger area, has advanced further in the integration of industries which are both labour and resource intensive (with important labour-intensive branches which are part of group 6 of the SITC). Both Trinidad and Tobago and Uruguay, and to a lesser extent Costa Rica, Guatemala and Honduras, would appear to face important non-tariff barriers in markets abroad,

⁶ For a critical analysis of natural-resource-based industrialization, see Rowner (1979).

Table 3
RELATIONS BETWEEN LABOUR-INTENSIVE EXPORTS, POPULATION
DENSITY AND DISTANCE^a

	% of exports making intensive use of labour ^b	Population density (inhabitants/km ²)	Distance from Miami (miles)
Paraguay	10.5	104	5 144
Bolivia	20.6	66	3 975
Uruguay	36.5	179	5 468
Guatemala	38.2	824	1 226
El Salvador	57.6	3 034	1 362
Costa Rica	43.2	566	1 400
Honduras	17.5	443	1 518
Jamaica	68	2 294	702
Haiti	90	2 653	856
Dominican Rep.	62.3	1 411	1 018

Source: Table 2, CELADE and airline travel annual reports.

^a The regression output results showing the dependence of labour-intensive exports on population density and distance are as follows:

Constant	29.4	
Std error of Y estimate	14.7	
R squared	0.74	
No. of observations	10	
Degrees of freedom	7	
X coefficient(s)	Std. err. of coeff.	t
0.016849	0.005879	(2.87)
-0.00196	0.003577	(0.55)

^b As a percentage of the total exports which registered an increase between 1978 and 1988 (see table 2, column 2).

particularly quotas on iron and steel or on textile and leather products. Moreover, as a result of greater reliance on exports of semimanufactures,

Trinidad and Tobago faces world markets which have grown at a considerably lower rate than manufactures.

II

Sources of competitiveness at the industry level

This section takes a closer look at sources of competitiveness at the industry level, in order to identify possibilities and options for small Latin American and Caribbean countries to advance towards higher-order sources of competitiveness. In the course of development, and particularly in its first stages, Porter suggests that the industries in which a nation is most likely to be successful are those where its home market is relatively large (Porter, 1990). Subject to further research, however, it appears that past attempts of small Latin American and Caribbean countries to expand home demand through regional integration as a basis for industrialization have re-

sulted in a rather limited number of competitive industries. The building of "finishing-touch" industries, heavily dependent on imports of the necessary raw materials, intermediate products and technology, appear to have been too dissociated from the factor conditions that shaped the competitiveness of those countries. It would appear that it is only when there has been a combination of relatively abundant local factor (labour and resource) use and reliance on a wider regional market that certain competitive industries have developed, such as textiles in Guatemala and El Salvador, and ceramics in Uruguay.

Moreover, when analyzing paths of competi-

tiveness at the industry level in the small Latin American and Caribbean countries, the overall impression is that most growing exports cannot be explained by competitiveness strengthened by the application of science and technology, and the industries that provide the lion's share of growing exports are not clearly related through vertical or horizontal links to other competitive industries or to technological services. However, some important exceptions may be noted, and the richness of sources of competitiveness at the industry level is greater than the overall picture might suggest (see table 4 and figure 1). Specifically, the degree of reliance on basic factor conditions as a source of competitiveness tends to vary widely, as does the extent to which technical progress has taken place.

a) *Labour-intensive manufacturing*

The most striking phenomenon as regards OECD imports from small Latin American countries is the rise in offshore assembly operations (table 5) which take advantage of United States tariff legislation allowing import duties to be levied only upon value added abroad and not upon U.S. inputs.

In answer to a USITC (U.S. International Trade Commission) questionnaire (USITC, 1988), officials of United States companies benefitting from offshore assembly provisions (formerly under U.S. Tariff Schedule items 807.00 and 806.3 and presently under harmonized tariff schedule subheadings 9802.00.60 and 9802.00.80) responded that the establishment of production operations outside the United States was mainly based on labour cost differentials, urged by pressure from imports. The influence of the tariff provisions was generally seen to be secondary, while the presence of free zones or in-bond treatment by foreign governments came in third place.

This result confirms the conclusion that most assembly operations in the small Latin American countries have been impelled by the availability of low-cost labour as their main source of competitiveness. The contribution of assembly-type activities to long-term competitiveness is still open to debate. However, the nature of this debate has changed over time. At first the question was whether assembly activities could contribute positively to a nation's development, and a num-

ber of well-known criticisms, associated with the enclave nature of these activities, were made. At present the discussion centers on the mechanisms that would allow the enhancement of the relationship between the domestic economy and assembly activities for export.

The main contribution of assembly activities to development lies in their generation of employment. From this point of view, there are only limited alternatives for countries with high unemployment, few natural resources and restricted home markets. Moreover, the diffusion of "industrial discipline" to a growing labour force may facilitate a future process of gradual upgrading of skills. Recent trends in some countries point to prospects for technology-intensive assembly operations that require a skilled labour force, although there are also possibilities of pollution-generating activities (Sánchez, 1990). The USITC report mentions possible technology transfer mechanisms, mainly through the acquisition of skills and discipline by the local work force and the mastering of process and product technology (USITC, 1988). There is also evidence of local sales to domestic exporting firms, of subcontracting networks and of a growing supply of services to Free Zones (UNIDO, 1988). The question is to what extent these linkages may be policy-induced.

Not all labour-intensive manufacturing exports in the countries considered involve offshore assembly operations (table 4). The latter tend to be of greater relative importance in the Caribbean, El Salvador and Costa Rica. In 1988 in the Dominican Republic, the Caribbean country with the most important offshore assembly activities, employment generated by this sector was greater than employment generated by the rest of the non-sugar manufacturing sector, and foreign exchange earnings were greater than those produced by all remaining non-traditional exports (PREALC, 1989). In other countries, including Honduras and Guatemala and, to a greater extent, Uruguay, labour-intensive manufacturing also tends to be intensive in the use of natural resources (wood, cotton, leather and wool products) and is integrated with the rest of the economy to a greater extent.

b) *Natural-resource-intensive activities*

Products based on the use of traditional and

Table 4
LATIN AMERICA: MAIN EXPORTS TO THE OECD COUNTRIES
(Millions of current US dollars, 1978 and 1988)

Item	1978	1988	Item	1978	1988	Item	1978	1988
<i>El Salvador</i>			<i>Costa Rica</i>			<i>Honduras</i>		
Coffee	408.5	411.8	Clothing	28.8	260.3	Fruit	206.9	433.8
Crustaceans	12.9	28.5	Fruit	252.5	531.3	Coffee	222.2	156.8
Clothing	36.7	37.3	Coffee	289.6	292.6	Seafood	17.0	102.9
Electrical			Meat	56.7	61.4	Meat	39.0	23.4
machinery parts	58.9	27.4	Flowers and plants	8.5	58.8	Clothing	3.3	63.6
Sugar	31.8	19.8	Seafood	5.4	49.0	Common minerals	30.0	18.8
Textile articles	10.0	24.5	Electrical mach. parts	6.3	39.0	Simply worked wood	24.8	18.8
Cotton	63.3	0.4	Jewellery	0.02	17.5	Cotton	14.3	0.2
Office machines	14.8	0.9	Vegetables	2.8	13.4	Wood manufactures	4.9	10.3
Other	39.2	41.0	Cocoa	27.9	6.5	Tobacco	12.1	14.5
			Other	35.0	141.3	Other	39.1	76.1
<i>Haiti</i>			<i>Jamaica</i>			<i>Dominican Republic</i>		
Clothing	49.5	174.8	Bauxite	577.5	391.3	Clothing	18.0	550.0
Miscellaneous	43.6	63.0	Sugar	69.4	78.1	Pig iron	76.6	235.4
manufactures			Clothing	8.3	224.9	Sugar	128.8	102.1
Electrical	21.1	67.3	Fruit	30.6	32.4	Leather manufactures	5.1	82.5
machinery parts	61.7	40.1	Alcoholic beverages	22.3	48.1	Jewellery	0.1	78.8
Coffee	3.8	15.4	Alcohols	0.05	15.9	Coffee	136.3	76.3
Textile articles	14.8	10.3	Vegetables	3.4	14.9	Cocoa	90.0	74.8
Essential oils	4.8	10.2	Coffee	4.8	12.0	Electrical mach. parts	13.2	73.1
Leather manufactures	8.9	5.2	Tobacco	6.8	9.7	Gold	5.1	95.5
Cocoa			Other	28.4	72.2	Tobacco	48.4	65.8
Common	16.2	—				Fruit and vegetables	31.1	64.3
minerals	43.9	76.5				Other	126.8	272.8
Other								
<i>Paraguay</i>			<i>Bolivia</i>			<i>Ecuador</i>		
Soybeans	61.8	317.9	Ores of base			Fruit	234.8	523.3
Coffee	53.7	63.5	metals	169.7	101.2	Seafood	44.4	513.1
Cotton	72.3	56.7	Gold	0.06	77.9	Crude oil	276.4	330.8
Leather	10.5	27.7	Tin	92.4	31.0	Coffee	290.2	160.6
Hides and			Coffee	6.4	19.2	Cocoa	142.8	114.4
skins	19.5	1.1	Ores of precious			Ref. petroleum products	65.4	88.0
Tobacco	13.2	7.6	metals	6.3	13.7	Animal feeding stuffs	12.0	40.4
Animal feeding stuffs	12.6	10.6	Wood manufactures	4.4	2.0	Chocolate	75.0	16.2
Simply worked			Crude oil	9.9	—	Simply worked wood	11.6	15.4
wood	1.8	10.9	Sugar	9.7	6.0	Textile fibres	6.8	11.2
Meat and			Leather manufactures	4.8	9.9	Crude veg. materials	1.4	9.1
conserves	26.3	6.4	Soybeans	—	5.4	Other	33.3	73.0
Clothing	0.02	8.8	Simply worked					
Other	31.1	29.9	wood	6.7	11.6			
			Other	29.1	20.3			
<i>Guatemala</i>			<i>Trinidad and Tobago</i>			<i>Uruguay</i>		
Coffee	494.6	350.8	Crude oil	779.7	415.5	Clothing	109.1	138.6
Cotton	122.9	28.9	Ref. pet. products	742.9	203.6	Tex. yarns and articles	52.7	92.0
Clothing	3.0	88.8	Inorganic chemical			Meat and conserves	38.0	100.8
Sugar	37.9	41.0	elements	33.9	117.8	Wool	58.0	62.1
Fruit	42.5	119.0	Sugar	39.9	30.4	Rice	32.5	58.4
Flowers	11.4	26.6	Fertilizers	6.3	36.0	Leather and its		
Vegetables	3.7	26.6	Alcoholic beverages	11.3	30.3	manufactures	56.1	71.3
Meat	29.1	19.1	Alcohols	0.1	60.1	Fresh fish	16.2	43.2
Oilseeds	13.2	15.5	Iron bars	—	43.7	Fruit	10.5	36.5
Molluscs	11.4	15.7	Common			Gold	—	104.0
Tobacco	10.3	15.6	minerals	2.2	17.8	Footwear	30.8	8.6
Crude oil	—	14.4	Cocoa	12.7	3.7	Animal feeding stuffs	12.5	12.0
Other	...	...	Other	39.6	68.0	Other	63.6	118.0

Source: United Nations, COMTRADE database, based on import figures of OECD member countries

Figure 1

COMPOSITION OF INCREASED EXPORTS TO OECD MEMBERS

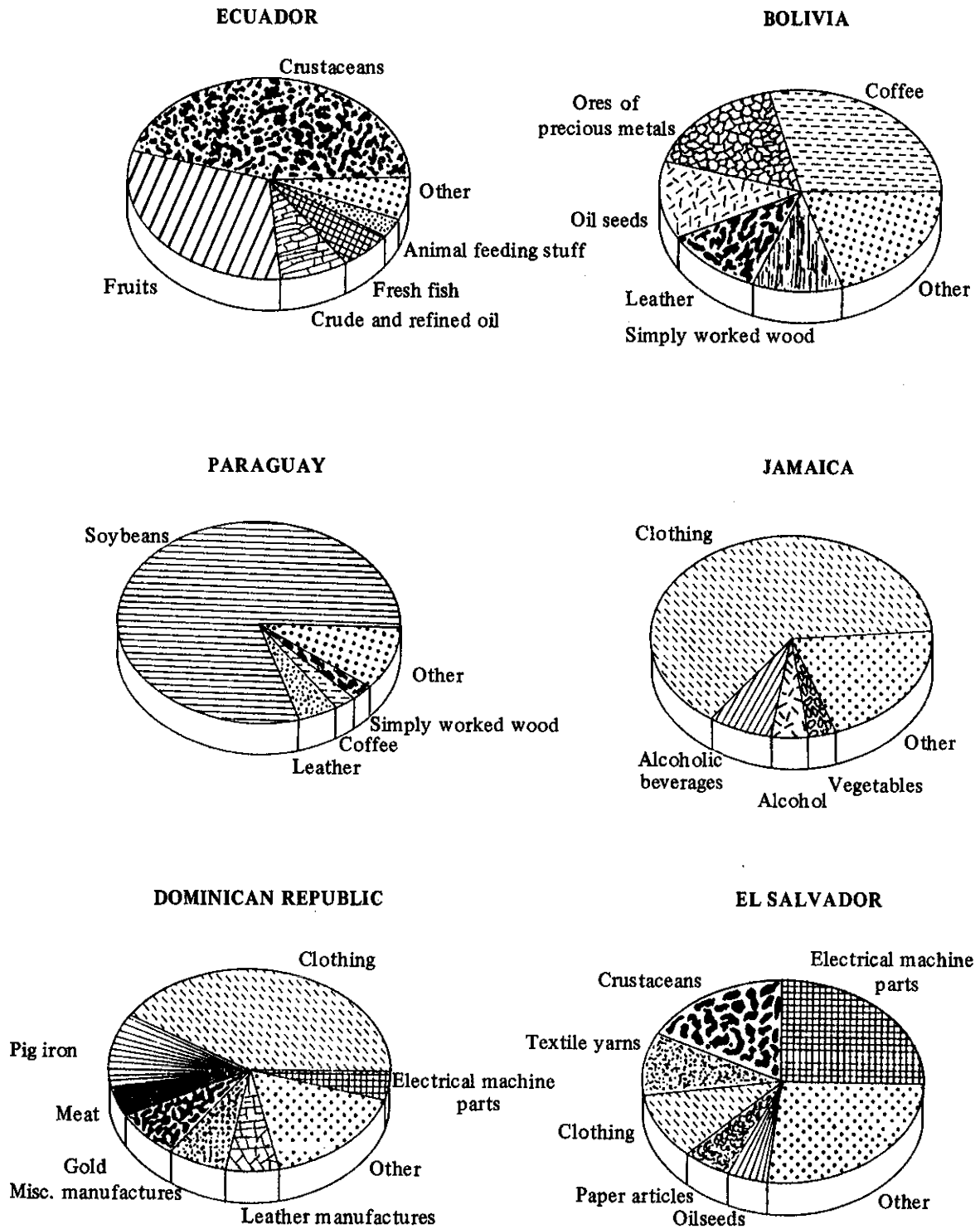


Figure 1 (continued)

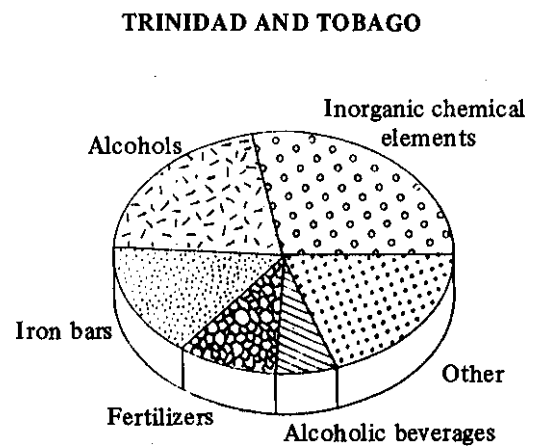
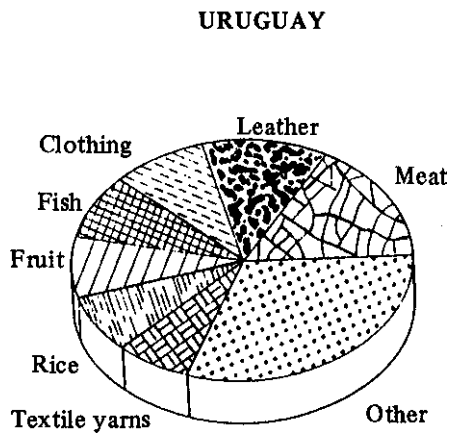
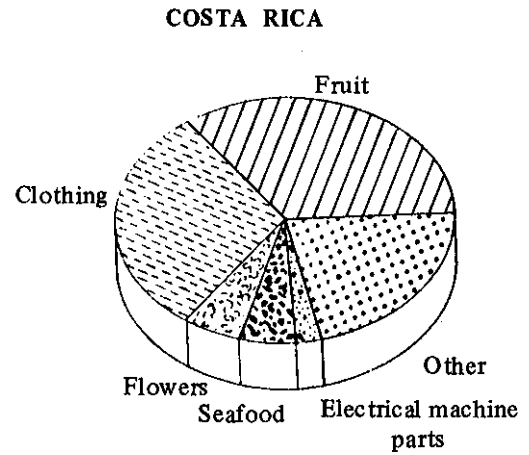
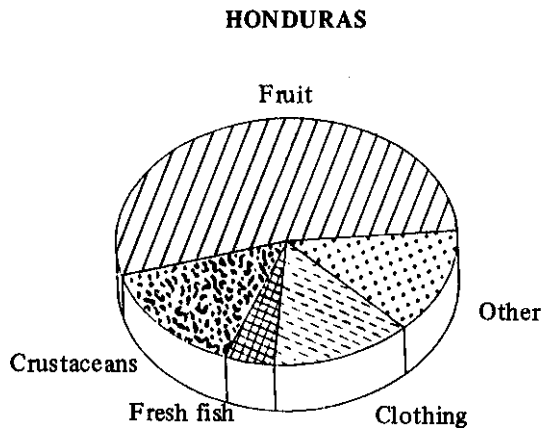
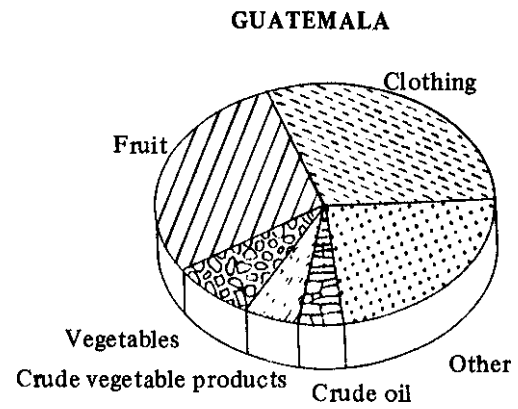
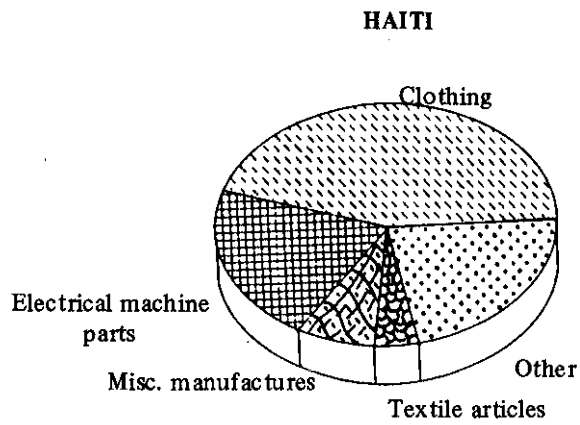


Table 5
OFFSHORE ASSEMBLY EXPORTS TO THE
UNITED STATES
(% of total exports to the U.S.)

Selected exporters	1983	1986
Dom. Rep.	13.8	22.4
Costa Rica	15.9	14.2
Haiti	41.3	38.6
Guatemala	0.2	1.5
Honduras	4.9	5.3
Jamaica	3.3	17.1

Source: USITC, *Annual Report on the Impact of the Caribbean Basin Economic Recovery Act on U.S. Industries and Consumers, Second Report, 1986*, Washington, D.C., September 1987 (Appendix A).

new resources with limited processing fared well in the 1978-1988 period. They include mostly fruit and seafood (see tables 4 and 5). Banana exports benefitted from relatively high prices in the latter part of the 1980s, and constitute an important source of foreign exchange and employment generation in Ecuador, Honduras, Costa Rica, Panama and Guatemala. These exports can be a source of competitiveness for downstream and upstream industries. During the banana boom in the late 1950s, Ecuador became a world-leading producer of plastic bags used to protect bananas in the growing process. The manufacture of baby food using banana compote is also a frequently studied though apparently less successful project. The development of the cardboard box industry in Costa Rica is basically due to demand derived from banana packaging requirements.

Other dynamic fruit exports (table 6) include pineapples and other tropical fruits with equal or greater upstream and downstream potential, such as tropical fruit juices.

Increased exports of vegetables have similar possibilities, whereas exports of ornamental plants, seeds and flowers face different technological and linkage requirements. Nevertheless, all of them involve the application of science and technology and the use of new production and marketing techniques, exemplified by the introduction of new varieties which compete successfully in developed country markets.

Seafood exports are examples of resource-constrained exports, as the success story of the

shrimp in Ecuador and several Central American countries demonstrates. As a result of the erosion of its natural resource base, an effort to master the technological complexities of shrimp larvae production in artificial circumstances is required to maintain the competitive edge of the industry. Mastering this technology could be a potential source of exports of related engineering services (ECLAC, 1990b).

c) Cases of "niche" products

The export data of certain small Latin American and Caribbean countries include a series of dynamic and competitive items whose weight in the total export figures is still relatively small. These are sometimes referred to as "niche" products (Katzenstein, 1985). The usual explanation of the upsurge of these "niche" products refers to the differentiation of products and markets, the globalization of industries and the related possibility of supplying items that have a relatively small world market, low price elasticity and high income elasticity. The search for niches has, in fact, become one of the basic pillars of the efforts of developed country enterprises to compete in international markets (Peters, 1988).

Nevertheless, large countries or enterprises may lack the flexibility needed to take advantage of very small market segments, while small enterprises or countries may benefit from specialization in these items. Furthermore, faced with the possibility of "injury" complaints in foreign markets, the ploy of remaining small within a given market so as not to threaten the larger supplier, and focusing on quality rather than on prices, would appear to be appropriate (Fundenberg and Tirole, 1984). Thus, "niche" products based on natural resources or specific country characteristics and including important design or product differentiation requirements may take advantage of both supply and demand-based sources of competitiveness. There are several examples of successful "niche" products in small Latin American and Caribbean countries:

A Uruguayan ceramic firm developed a technology adaptation based on locally available natural resources. The use of firewood allowed the firm to attain special colour characteristics, and access to the Argentine market through a regional integration scheme stimulated a learning process in commercialization in foreign markets.

Table 6
MAIN EXPORTS OF FRUITS AND VEGETABLES
TO THE USA
(US\$ million)

Country/SITC heading	1978	1988
ECUADOR		
0573 Bananas	124.2	232.3
05 Total	125.1	238.4
COSTA RICA		
0579 Fresh fruit (pineapple)	—	29.7
0573 Bananas	104.7	213.4
05 Total	111	262.9
GUATEMALA		
0545 Other fresh vegetables	3.1	10.9
0546 Vegetables, frozen	—	12.1
0579 Fresh fruit (pineapple)	0.1	9.9
0573 Bananas	25.4	83.4
05 Total	28.8	121.3
HONDURAS		
0579 Fresh fruit (pineapple)	6	17.1
0573 Bananas	119.9	239.4
05 Total	129.3	264.5
DOMINICAN REPUBLIC		
0548 Vegetable products (sugar cane)	0.4	6.4
0565 Prepared vegetables	4.5	12.7
0579 Fresh fruit (pineapple)	1.2	8.5
05 Total	29.1	54.3
HAITI		
0579 Fresh fruit (pineapple)	0.9	6.3
05 Total	1.2	6.7
JAMAICA		
0548 Vegetable products (sugar cane)	0.4	6.4
05 Total	1	10.7
PANAMA		
0579 Fresh fruit (pineapple)	0.2	7.6
0573 Bananas	39.6	66.3
05 Total	41.4	77.4

Source: COMTRADE.

high-quality towels showing colourful and typical Central American paintings.⁷

Blue Mountain Coffee from Jamaica, sold at a retail price double or even three times that of other arabica varieties, exemplifies the case of product differentiation which emphasizes the country of origin as well as the quality of a traditional commodity.

In Costa Rica, exports of jewels, doors and canes made from tropical hardwood have benefited from the availability of valuable hardwoods and from designs adopted as a result of close contact with buyers and knowledge of foreign markets.

Exports of tagua buttons from Ecuador are another case of a natural-resource-based niche. The tagua is a palmtree that produces a nut which dries so hard that it is called natural ivory. A private and hobby-like research effort taking several decades, including design of machines and market research, resulted in a now flourishing industry with dozens of firms employing thousands of workers that produce buttons for exclusive fashion houses in Italy and France.⁸

The upsurge of "niche" exports suggests the diversification of sources of competitiveness. Factor-based sources of competitiveness combined with product differentiation and special marketing efforts would appear to explain these developments.

d) Searching for competitive commodity chains

In view of the weakness of home demand as a single source of competitiveness, progress towards more sophisticated and diversified sources of competitiveness may rely upon supply-push rather than demand-pull mechanisms. Thus, building efficient commodity chains that take as a starting point existing competitive industries could be a promising step towards achieving growing and sustainable competitiveness, especially for small countries, whereas the positive influence of expanded home demand on com-

At present, the firm is competitive in a variety of products in the most demanding markets (ECLAC, 1990c and Hernández, 1989).

A Salvadorian producer of textile articles (towels) found a niche in foreign markets with

⁷ Information based on a visit to the enterprise by one of the authors.

⁸ Based on a visit to enterprises by one of the authors. The results of this study were published by UNIDO, *Hacia una política industrial ecuatoriana*, PPD/R.24, Vienna, June 1989.

petitiveness may be more significant at higher levels of income.⁹

Competitive commodity chains have been analyzed by Hopkins and Wallenstein (1986), Gereffi and Korzeniewicz (1990) and Porter (1990) from different points of view. For Hopkins and Wallenstein a commodity chain is a concept required to analyze the historical evolution of capitalism. It refers to the system of production processes and labour which results in the finished product. Gereffi and Korzeniewicz extend this concept to include not only the production but also the marketing process, including financial and trade services.

For Porter, relations between industries in clusters can strengthen the sources of competitiveness of those industries which are part of the cluster. Industries are not only linked vertically (buyer/supplier relations) as in the Wallenstein/Gereffi version, but also horizontally if they share common customers, technologies and skills; they therefore share common learning processes in both the production and marketing stages.

In spite of the predominance of exports based on the use of unskilled labour or unprocessed natural resources, a number of closely linked export items illustrate the potential of an export strategy based on competitive chains in small Latin American and Caribbean countries. This concept, rather than Porter's clusters, is used in what follows since the analysis of horizontal linkages requires presently unavailable information on specific industries in these countries.

In Uruguay the most important competitive chain is the wool-based apparel chain. The country is a major wool exporter in the world market. Exports of wool and wool-based products include wool, tops, apparel and related articles. The sophistication of the clothing industry is such that more than a dozen firms in Uruguay have integrated computer-aided design and computer-aided manufacturing facilities. They employ their own designers who operate in the world's fashion capitals. The strength of the apparel in-

dustry can be illustrated by the rise in cotton apparel, which is an industry more or less loosely linked to the wool industry through common customers, even though the country has to import the raw material.

In contrast, a commodity chain that seems to be losing its competitive edge in the activities with higher value-added is the meat-leather-clothing-footwear chain in Uruguay. The loss of competitiveness in the higher-productivity parts of the chain seems to result from protection of home production involving leather import regulations. The quality of national leather is not always homogeneous and delivery interruptions result in leather-using industries losing customers.

It is interesting to observe the difference of complexity of the oil-chemicals chain between Ecuador and Trinidad and Tobago. Whereas the oil crisis has hit Trinidad relatively harder, its oil-based chemicals are doing well on international markets. In spite of the availability of oil in Ecuador, however, efforts to diversify into oil-related chemicals have not been successful. In contrast, the wood, semi-manufactured wood and furniture chain in Honduras would appear to be a further example of competitiveness strengthened by a commodity chain. The move towards higher value-added activities is clear, with the necessary caveat that further development urgently requires prudent management of the natural resource base.

A clearer success story involves exports of textile products (particularly towels) in Guatemala, based on the vertical integration of marketing, design, and textile and cotton production. This case exemplifies the integration of two originally different activities: one based on regional import substitution and another on traditional exports to developed country markets. The application of integrated pest control in cotton production in this case also demonstrates the possibility of dealing with environmental concerns through innovations which strengthen both competitiveness and sustainability.

In terms of Porter's "diamond", the development of competitive chains means that the diversification of the sources of competitiveness includes not only factor conditions but also efficient supporting industries.

⁹ Nevertheless, exports of "ethnic" products to, for instance, the hispanic population in the United States may be facilitated by existing markets in Latin American countries.

III

Conclusions

Data on OECD imports in 1978 and 1988 from a dozen small Latin American and Caribbean economies show that the primary and often sole source of competitiveness is the availability of low-cost unskilled labour and unprocessed natural resources. Declining prices of these countries' traditional commodity exports made them extremely vulnerable to the financial upheavals of the 1980s. Assembly operations and fruit and seafood exports were in many cases the only options left open to increase foreign exchange earnings.

Changing production patterns with social equity, as proposed by ECLAC, is a formidable and daunting task of the 1990s for the small Latin American and Caribbean economies. Evidence of continued reliance on low-grade factor availability, including unskilled labour and natural resources, implies that increasing competitiveness must build upon these already established sources of comparative advantage. The option of relying on assembly activities made uncompetitive in the United States by high labour costs is likely to be important mostly for its employment-generation effects. Its learning and skill-creating effects could probably be enhanced through specific programmes, while creating incentives for greater linkages with the rest of the economy.

Combining labour and resource-intensive activities, while ensuring continued access to foreign markets (possibly through free trade agreements with the United States in particular) will be an important though difficult challenge to be met by small Latin American and Caribbean countries. Ensuring the application of science and technology to these sectors or to solely resource-based activities, both to improve competitiveness and to ensure environmental sustainability, will also be required. The fascinating success of some "niche" products poses the question of how to foster this kind of development, which in addition to past imagination and creativity and to a thorough knowledge of market conditions in very specialized segments, will require increased innovation and adaptability.

Finally, strengthening of national clusters as a supply-push mechanism to upgrade the sources of competitiveness may be a more realistic approach to development in this stage than relying exclusively on demand-pull mechanisms through an expanded home market. The implications for integration schemes are manifold. Their main task seems to lie in the creation of outward-oriented regional technological, commercial and educational co-operation mechanisms to upgrade the factor-based sources of competitiveness that have shaped the countries' export structure and will continue to do so in the near future.

Bibliography

- Demas, W.G. (1965), *The Economics of Development in Small Countries, with Special Reference to the Caribbean*, Montreal, McGill University Press.
- Dosi, G. and L. Soete (1988), Technical change and international trade, G. Dosi, C. Freeman and others (eds.), *Technical Change and Economic Theory*, London, Pinter Publishers.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1990a), *Changing Production Patterns with Social Equity* (L/C/G.1601, SES.23/4), Santiago, Chile, 19 March. United Nations publication, Sales No.: E.90.II.G.6.
- _____ (1990b), Shrimp cultivation in Ecuador, *Changing Production Patterns with Social Equity* (L/C/G.1601, SES.23/4), Santiago, Chile, 19 March, box V.4. United Nations publication, Sales No.: E.90.II.G.6.
- _____ (1990c), Ceramics in Uruguay, *Changing Production Patterns with Social Equity* (L/C/G.1601, SES.23/4), Santiago, Chile, 19 March, box V.1. United Nations publication, Sales No.: E.90.II.G.6.
- Foy, G. and H. Daly (1989), *Allocation, Distribution and Scale as Determinants of Environmental Degradation: Case Studies of Haiti, El Salvador and Costa Rica*, Environmental Department Working Paper, No. 19, Washington, D.C., World Bank, September.
- Fundenberg, D. and J. Tirole (1984), The fat-cat effect, the puppy-dog ploy, and the lean and hungry look, *The American Economic Review*, vol. 74, No. 2, San Francisco, California, American Economic Association, May.
- Gereffi, G. and Miguel Korzeniewicz (1990), Commodity chains and footwear exports in the semiperiphery, William Martin (ed.), *Semiperipheral States in the World Economy*, Westport, Greenwood Press.
- Hernández, J. (1989), Informe sobre la empresa de cerámicas Metzen y Senna, Montevideo, ECLAC Office in Montevideo, Transport and Communications Division, August, mimeo.
- Hopkins, Terence K. and Immanuel Wallerstein (1986), Commodity chains in the world economy prior to 1800, *Review*, vol. X, Binghamton, New York, Fernand Braudel Center.
- Hufbauer, G.C. (1970), The impact of national characteristics and technology on the commodity composition of trade in manufactured goods, R. Vernon (ed.), *The Technology Factor in International Trade*, New York, NBER (National Bureau of Economic Research, Inc.), Columbia University Press.
- Katzenstein, P.J. (1985), *Small States in World Markets. Industrial Policy in Europe*, London, Cornell University Press.
- Kuznets, S. (1960), Economic growth of small nations, E.A.G. Robinson (ed.), *Economic Consequences of the Size of Nations*, London, Macmillan Publishing Co., Inc..
- Lewis, V.A. (ed.) (1976), *Size, Self-determination and International Relations*, Kingston, Institute of Social and Economic Research (ISER), University of the West Indies.
- Perkins, D.W. and M. Syrquin (1989), Large countries: the influence of size, H. Chenery and T.N. Srinivasan (eds.), *Handbook of Development Economics*, vol. II, Amsterdam, Elsevier.
- Peters, T. (1988), *Thriving on Chaos. A Handbook for a Management Revolution*, New York, Alfred A. Knopf, Inc.
- Porter, M.E. (1990), *The Competitive Advantage of Nations*, New York, The Free Press.
- PREALC (Regional Employment Programme for Latin America and the Caribbean) (1989), *El sistema integrado de producción en el sector textilero de la República Dominicana*, Working document No. 334, Santiago, Chile, August.
- Rowmer, M. (1979), Resource-based industrialization in the developing countries: a survey, *Journal of Development Economics*, vol. 6, No. 2, June.
- Sánchez, R.A. (1990), Health and environmental risks of the maquiladoras in Mexicali, *Natural Resources Journal*, vol. 30, No. 1, Albuquerque, New Mexico, University of New Mexico School of Law, Winter.
- Seers, D. (1981), Development options: the strengths and weaknesses of dependency theories in explaining a government's room to manoeuvre, D. Seers (ed.), *Dependency Theory. A Critical Reassessment*, Dover, United States, Frances Pinter (Publishers) Ltd.
- UNIDO (United Nations Industrial Development Organization) (1988), *Export Processing Zones in Transition. The Case of the Republic of Korea*, Vienna, 10 June.
- _____ (1989a), *Toward Linking Export Processing Zone Firms with the Domestic Economy: the Case of the Republic of the Philippines*, Vienna, June.
- _____ (1989b), *Hacia una política industrial ecuatoriana*, Vienna, June.
- USITC (United States International Trade Commission) (1988), *The Use and Economic Impact of TSUS Items 806.30 and 807.00*, Washington, D.C., May.
- Walsh, V. (1988), Technology and the competitiveness of small countries: a review, in C. Freeman and Bengt-Ake Lundvall (eds.), *Small Countries Facing the Technological Revolution*, London, Pinter Publishers.

Transfer of technology: the case of the Chile Foundation

*Torben Huss**

Restructuring and the incorporation of modern technology are crucial in order to increase productivity and develop international competitiveness in Latin American industries.

Transnational corporations are the main source of industrial technology in the world, and most countries in Latin America will continue to depend on access to that foreign technology to modernize their industries.

The process of acquiring and assimilating foreign technology is a difficult and resource-hungry business for individual enterprises because it involves searching for the most appropriate technology, bargaining for an optimal agreement with the foreign supplier and adapting the technology to local conditions. The recipient enterprise must learn to master the technology in order to make the best use of local resources and establish an internationally competitive position. This article analyses the ways in which the promotion and creation of local consulting and engineering design organizations can improve and facilitate the transfer of foreign technology to Latin American countries by assisting national enterprises to better select, adapt and assimilate the imported technology.

This is highlighted in a case study of the Chile Foundation, an innovative Chilean consulting and engineering design organization which represents one manner of overcoming the barriers of technology transfer.

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Introduction

The acquisition of technological capabilities is a basic requirement for the continued growth and development of the Latin American and Caribbean countries. Technological change has accelerated in recent years and the pace of technological progress is now understood to be of crucial importance for international trade and competitiveness.

In most of the countries in the region, however, the demand for technology cannot be met immediately by local technological capabilities. Accordingly, these countries depend on the transfer and diffusion of foreign technologies to transform and modernize their industries.

The process of acquiring technological capabilities abroad—that is, searching for the most appropriate technology, bargaining for an optimal agreement with the foreign supplier, and then assimilating the technology and adapting it to local conditions—is long and very resource-demanding for individual enterprises. This is particularly so when the technology is not fully embodied in machinery and equipment that can be purchased ready-made, or when the technology is new and highly specialized.

Unfortunately, it is very difficult for policymakers in developing countries to solve these problems. Technology is not a homogeneous commodity. The costs, potential benefits and technical characteristics must be dealt with in the context of specific cases. There are few general rules or solutions available, but most research studies on technology transfer seem to agree that those developing countries which have the capacity to search out and evaluate foreign technology are usually able to acquire and apply the technologies they need on satisfactory terms.¹

But how can governments in developing countries strengthen this capacity where it exists or implant it where it does not already exist?

This article analyses the ways in which the promotion and creation of local consulting and engineering design organizations (engineering service firms, ESFs) can improve and facilitate the transfer of foreign technology to developing countries by assisting national enterprises to

¹ For an overview see Vernon, 1988.

better select, adapt and assimilate the imported technology² Special consideration will be given to the question of whether ESFs formed as joint ventures between transnational corporations (TNCs) and national agents carry greater potential to spread and strengthen ESF capabilities in developing countries.

The article begins by discussing, in section I below, the specific meaning which will be ascribed to the terms "technology" and "transfer of technology". Thereafter, different forms of technology transfer from TNCs to developing countries are discussed in order to understand why those forms of technology transfer in which the host country retains majority or total ownership of the investment project or enterprise have been gaining importance. Section I then proceeds to analyse the requirements and constraints that the recipient enterprise must satisfy in order to assimilate, adapt and diffuse the transferred technology effectively.

In section II of the article, ESFs are characterized in order to examine how they can assist national enterprises in the technology transfer process. The section also analyses the constraints on local ESFs in developing countries and discusses the question of whether joint ventures with transnational corporations simplify the difficult

start-up phase and provide the necessary technological capabilities.

In section III, a case study is presented in order to gain further insight into how a national ESF, in joint venture with a transnational corporation, can create such technological capabilities and facilitate technology transfer to a developing country. The advantage of the case study methodology is that it permits the analysis and comprehension of a complex situation in which many variables interrelate. The conclusions drawn may not be of general validity, but they present a specific experience that can be a valuable source for learning.

The case chosen is the *Chile Foundation* (Fundación Chile). The Chile Foundation is a joint venture between the Government of Chile and the US-based transnational corporation ITT, and its aim is to "transfer to Chile those technologies which can improve the utilization of the nation's natural resources and productive capacity and stimulate the creation of new business enterprises based on these technologies" (Chile Foundation, 1986). The case study is primarily based on interviews with Mr. Pablo Herrera, Manager of the Chile Foundation, but it is also based on information taken from annual reports and other publications of the Foundation.

I

Technology and transfer of technology

1. *Technology: a definition*

It is important to clarify from the beginning the concept of technology used in this study. Often technology is understood as machinery and other forms of "hardware". But it is more than that. It has to do with the knowledge needed to produce specific goods or services. Part of this knowledge is embodied in machines, but most of it is not. It is embodied in human skills, in manage-

ment methods, in routines, and in organizational structures. Thus, E. Mansfield has defined technology as "the stock of knowledge (technical or management) which permits the introduction of new products or processes". Technique differs from technology in that "the former is a method of production at a given moment which is defined by the equipment and the management method used, while the latter is the *whole* of the knowledge used in production" (Mansfield, 1968).

2. *Transfer of technology: a definition*

Transfer of technology is best understood as the process of acquiring technological capability

² It should be established from the beginning, however, that this article intends to suggest that ESFs are an important, but not of themselves sufficient, condition for fulfilling development goals as regards technology transfer.

from abroad. It consists of three stages: (i) the transfer of existing technologies to produce specific goods and services; (ii) the assimilation and diffusion of those technologies in the host economy; and (iii) the development of indigenous capacity for innovation (UNCTC, 1987). Hence, technology transfer is not completed by acquiring technical knowledge (information embodied in blueprints or operational manuals) or the means of carrying it out such as capital goods. The technology transfer is only completed when the recipient fully understands the technology or has acquired the technological capability to use it effectively. This requires the ability to adapt and modify the technology to local conditions and improve it through innovation. Technological capability can only be acquired through the formation of human capital, which is related to education, job training, experience, and specific efforts to understand, adapt, improve or create technology.

3. Different forms of technology transfer

Transnational corporations (TNCs) are the main source of industrial technology in the world, and the most important actors behind the international transfer of technology. Foreign direct investment (FDI) has traditionally been the principal mode by which TNCs have transferred technology to developing countries because it involves continuing direct ownership of the technology. According to Richard E. Caves, it is important for a TNC to retain control over its technology because it is considered part of the firms "intangible assets". Such assets (like industrial property rights, unpatented know-how, marketing know-how, etc.) provide the firm with a competitive advantage over other firms (Caves, 1982). This points to a relatively limited technology transfer by way of FDI, because TNCs are reluctant to share their intangible assets. The technology transfer primarily occurs through the establishment of linked industries within the local economy or through the secondment of trained personnel to local enterprises. Since the late 1970s, however, other mechanisms for technology transfer have been gaining importance. TNCs are expanding their use of joint ventures and non-equity arrangements such as: (a) licensing; (b) franchising; (c) management contracts; (d) marketing con-

tracts; (e) technical service contracts; (f) turnkey contracts; and (g) international subcontracting.

This broad range of international corporate activities is covered by the term "new forms of investment" (NFI). According to Charles Oman, these new forms of investment have the common denominator that a foreign company provides assets (e.g., equipment and technology) to an investment project or enterprise in a host country but local interests in the host country retain majority or total ownership of the investment project or enterprise (Oman, 1989). A number of factors have caused the growth of NFI. The rapid expansion of TNCs in the late 1960s and 1970s increased global competition among technology exporters, which enabled governments of developing countries to introduce restrictive legislation limiting the establishment of wholly-owned TNC subsidiaries. Many governments saw NFI as a way to enhance host-country control over production and increase technology transfer. But today the trend in most developing countries is to liberalize policy towards foreign direct investment (FDI) in an attempt to attract more flows of such investment. The decline in voluntary bank lending and the acute balance-of-payments problems that many countries face have resulted in a need for investment that surpasses previous concern over ownership shares. FDI is also widely viewed as the principal source of new technology and access to international export markets, both of which are badly needed in order to increase international competitiveness.

Despite this setback for the original policy aims, there is evidence that NFI will continue to gain importance in developing countries. First, some of the larger and more industrialized developing countries have already built up considerable local capacities in management, technology and equipment production and therefore are able to acquire and bargain for specific assets from foreign suppliers. Secondly, many TNCs have realized that a minority or even a non-equity position does not necessarily imply inadequate control of the intangible assets (e.g., technology). In fact, a growing number of TNCs are finding that they can earn attractive returns from selling intangible assets without having to finance the investment projects, because this means reduced exposure to commercial and political risks compared with FDI. According to John Dunning and

John Cantwell, this is the case when the local partner has a valuable contribution to make, the technology is of a mature, standardized kind, or it is of secondary concern to the major activities in which the TNC is engaged (Dunning and Cantwell, 1986). Oman (1989) has also stressed that small- and medium-sized OECD-based firms which do not have the resources to undertake an FDI operation use NFI as a strategy to internationalize their activities and compete with the major TNCs and market share leaders.

The question that arises now is whether NFI can result in an effective technology transfer to developing country enterprises and, if affirmative, what capabilities the recipient enterprises have to absorb the technology. This will be examined in the next section.

4. *Technology transfer and technical change in developing country enterprises*

The dominant feature of enterprises in developing countries has been that they have remained more or less passive recipients of technology from TNCs. Protected behind trade barriers, local enterprises lacked incentives to embark on an active strategy to raise productivity through innovations. Technology was purchased from TNCs because this was faster than developing it locally and the high costs of imported technology could be passed on to consumers. Early studies of technological development in the Third World focussed mainly on the problems associated with the transfer of technology from richer to poorer countries. These problems were primarily related to the cost and appropriateness of the technology transferred. It was suggested that the recipient countries were paying too much for the technology because of their weak bargaining position *vis-a-vis* technology suppliers. National enterprises lacked information about alternative production possibilities and did not know the true value of the technology. This was due to the special characteristics of the technology market. As pointed out by Arrow, the fundamental paradox of that market was that the value of the technology was not known to the purchaser until he had the information, by which time in effect he had already acquired it without cost (Arrow, 1971).

The technology itself was considered to be

inappropriate to local conditions and resources in the majority of cases, and it was often utilized in an inefficient way by the recipient countries. It was also implicitly assumed that imported technology inhibited and replaced indigenous innovation efforts in developing countries.

In the late 1970s, case studies conducted at the enterprise level suggested a more dynamic relationship in which technology transfer under certain circumstances could induce indigenous innovative activities by the recipient enterprises (Fransman and King, 1987). The case studies of how enterprises assimilated and adapted imported technology revealed that the process of assimilating technology by the recipient enterprise often required problem-solving in which the solution was not given by the technology supplier. These problems were even greater when the conditions prevailing in the recipient country differed substantially from those of the country where the technology was developed. The assimilation of technology, therefore, involved a process of technological change which in some cases led to the appearance of products and production processes that were considerably different from those in the developed countries.³

It was pointed out in the case studies that the process of acquiring technological capabilities is very uncertain and not simply the automatic outcome of production experience ("learning by doing"). It cannot be expected that the mere fact of undertaking a specific type of production will result in a learning process and the development of capabilities to improve the ways of carrying out such production. To some extent, learning by doing is clearly a necessity in many phases of technological development. But it does not seem to be sufficient to maintain progress through all phases. Bell, in particular, has stressed that learning by doing is only one mechanism for augmenting technological capacity.⁴

Equally important for overcoming dis-

³ This has in many cases led to a South-South export of technology (Dahlman and Sercovich, 1984).

⁴ See: Martin Bell, "Learning and the accumulation of industrial technological capacity in developing countries", in Martin Fransman and K. King (1987), pp. 187-209. If this were the case, it would lead to the policy prescription that protection of national enterprises (infant industries) was a sufficient means to enhance learning.

continuities and, perhaps, also for achieving overall efficient assimilation of imported technology, is explicit investment in human capital (training of personnel and hiring of advisors), which will create a capacity for change and adaptation. The development of capabilities to assimilate and adapt imported technology successfully (thus improving productivity) depends on an active strategy for acquiring technology by the recipient enterprise. The optimal strategy will obviously vary across countries, sectors and enterprises, but there seems to be a wide measure of agreement that active technology transfer strategies should involve the following elements/phases:

- a) Assessment of technology.
- b) Assimilation and adaption of technology to local conditions.
- c) Diffusion of technology.
- d) Innovation.

These are considered briefly in the remainder of this section.

a) *Assessment of technology*

In most industries, one sole technology is rarely the best for all circumstances. National factor endowments vary, as does the nature of intermediate inputs. Therefore, when choosing among alternative technologies, the recipient enterprises must find the most *appropriate* technology, that is, the one that makes optimum use of available resources.⁵

The first step to take in assessing and selecting a technology is to identify local needs and conditions. This is essential in developing countries, where the needs and conditions are often very different from those in the countries that supply most of the technology (Dahlman, Ross-Larson and Westphal, 1987). The benefits of such identification seem quite obvious, yet many investment projects in developing countries fail to do this. Specifically, the failure to identify local constraints is a repetitive problem which undermines many investments in developing countries. The typical constraints are in the areas of energy, transport, capital, skilled labour, and the supply of raw materials and other intermediate inputs.

⁵ This is the definition of appropriate technology used by Dahlman and Westphal (1983).

The second step is to search out the available technologies on the international market. This requires extensive information about different technology suppliers and is frequently by-passed because of the significant costs and capabilities required. Needless to say, the failure to do this has costly consequences in the long run.

The third step in assessing new technologies is to evaluate their associated benefits and cost, using prices that properly reflect relative scarcities (Dahlman and Westphal, 1983). This involves essentially economic considerations, but social and environmental aspects could also be analysed.

The fourth step is to decide if the capabilities that can be acquired from experience with different technologies will enable the enterprise to make future improvements and innovations in order to increase productivity, or move on to new activities. Some technologies open up more possibilities than others.

b) *Assimilation and adaption of technology to local conditions*

Once the different technological possibilities have been properly assessed, then, ideally speaking, the enterprise should move on to the phase of assimilating and adapting the selected technology to local market conditions. Often, enterprises will experiment with more than one technology before making their final technology choice.

The aim is to understand the technology and 'fit' it to local conditions. The challenge is to take advantage of local demand and supply conditions to improve productivity and international competitiveness. This phase will most likely involve minor innovations or modifications of the technology to increase productivity, reduce costs, stretch capacity or improve quality. Many enterprises fail to achieve a sufficient understanding and effective adaption of the foreign technology before initiating full-scale commercial production. The consequences can be low productivity, loss of competitiveness and inadequate development of technological capacity to innovate and overcome production-related discontinuities. The constraints on enterprises during this important phase of the technology transfer process are, typically, lack of qualified personnel and absence of proper laboratories and test plant facil-

ities. Another problem is that adapting technology can be a very long and therefore costly process because the initial production output with the new technology is low. Many enterprises do not have the economic resources to invest sufficient time in this process.

c) *Diffusion of technology*

When the enterprise has gained sufficient knowledge of the technology's potential and some experience in its use, the technology can be diffused on a larger scale. Additionally, efficient diffusion requires knowledge of capable construction companies, relevant management capabilities, sufficient capacity to bargain with local authorities, and economic resources to acquire an appropriate production site.

d) *Innovation*

As mentioned earlier, the efforts to assimilate and adapt technology to local conditions can lead to minor innovations (invention of new devices, products and production processes or improvements of the existing technology). It would be correct to speak of an 'incremental' or 'evolutionary' innovation process, to distinguish it from the more radical innovations (Herbert-Copley, 1989, p. 10). But as revealed in the above-

mentioned case-studies (see Fransman and King, 1987), the innovation process (technical change) does not proceed at a constant rhythm or in a uniform direction. Innovations will often be the result of efforts to overcome constraints on the enterprise's production capacity.

5. Conclusion

It should be stressed that a successful transfer of technology usually depends on a conscious decision and effort by the recipient enterprise to invest time and economic and human resources in assessing and testing the technology, training personnel and contracting technical assistance. Even so, the process is very uncertain and the acquired technology may not necessarily increase the technological capacity of the enterprise.

The problem is that many enterprises, especially in their formative years, lack the experience and financial resources to conduct the necessary assessment, adaptation, diffusion and modifications of the imported technology.

In the next section the characteristics and types of services offered by engineering service firms (ESFs) will be defined in order to see how they might offer a solution to the barriers to technology transfer.

II

Characteristics of Engineering Service Firms (ESFs)

There is no hard-and-fast definition of ESFs. Here the definition is chosen on a functional basis and, accordingly, ESFs can be defined as organizations that gather, organize, co-ordinate and apply knowledge for purposes of investment and production. They are characterized by a flexible and multidisciplinary approach to that activity. The services provided for the formulation or execution of an investment project can be of a technical, economic, financial, legal, environmental, or organizational character.

According to Roberts (1973), engineering service activities can be defined as "the set of methods and organizational structures which allow relevant scientific, technical and economic

knowledge to be gathered and converted into designs and instructions for the construction of specific projects". Hence, the role of ESFs is to keep up to date with international scientific advances and accumulate technological knowledge for the design and implementation of national investment projects. The discussion of ESFs below proceeds to define limits for the range of activities that can be described as technical engineering services.

1. Types of services offered by ESFs

A.K. Malhotra (1980) has summarized the services offered by ESFs under the headings of pre-investment services, process and technological

services, project implementation services, procurement and inspection services and, finally, operation and maintenance services. This classification is useful because it reflects the different phases of an investment project, and Table 1 has been prepared in line with it (it should be noted that in that table "procurement and inspection services" was modified to read "inspection and quality control services"). The aim of the table is to describe the purpose of the services offered, the type of information required, and the source of such information. Additionally, the table shows how these services correspond to the different stages in the technology transfer process.

a) *Preinvestment services*

The first stage of an investment project requires economic and technological engineering feasibility studies. Studies of the social impact and environmental consequences of the project will also often be relevant.

The performance of these services requires an interdisciplinary team, with a knowledge of the technology available to the project, information on economic optimization methods, and the ability to carry out market and product analysis. The output typically will be a report evaluating different technology choices and also taking financial, economic, social and environmental issues into consideration. The report constitutes the basis for an investment decision, usually in the form of a recommendation to test specific technology alternatives. In the technology transfer process, this phase corresponds to the initial assessment of the technology available on the market.

b) *Process and technological services*

These services involve the development of manufacturing process capabilities and the accumulation of knowledge of production methods, through research and tests of different technologies in laboratories, pilot plants, etc. Process and technological services may be conducted "in-house" by the ESF or in collaboration with outside research institutions. In the technology transfer process these services correspond to the assimilation and adaptation of technology to local conditions, culminating in the final choice of technology.

c) *Project implementation services*

These services transform the project from a concept/proposal to an actual installation. The purpose is to acquire technology for large-scale production and execute the project proposal. The tasks involved are "preliminary engineering for selection of major equipment and materials, preparation of bid documents for suppliers, detailed engineering, including calculation and fabrication drawings, design and award of contracts, fabrication and supervision services" (Malhotra, 1980, p. 14). The engineering services will go hand-in-hand with construction supervision.

Project execution requires substantial human resources, management capability, detailed knowledge of technology, knowledge of equipment suppliers, etc.

In the technology transfer process these services correspond to bargaining with technology suppliers and the diffusion of technology.

d) *Inspection and quality control services*

The purpose of these services is to improve and standardize the quality of production to satisfy requirements of both export and domestic markets. This involves factory inspection, testing of products and quality control according to established standards. Inspection and quality control services demand familiarity with the relevant inspection codes and the standards required, detailed knowledge of equipment, suppliers and their specifications, and the availability of experienced inspectors. As part of the quality control activities, the ESF can provide process and technological services if the product does not comply with standards.

e) *Operation and maintenance services*

These services concern the effective functioning of plant and the elimination of production-related problems. This involves training of personnel, trouble-shooting, adaptation of technology, etc. The provision of operation and maintenance services requires experience, knowledge of similar plants, and "learning by doing".

This short summary of the services offered by ESFs shows that they have the potential to assist national enterprises in all aspects of an investment project, and likewise during all phases of the technology transfer process

Table 1
ESF SERVICES

Services	Purpose	Type of information required	Sources of information	Stages of the technology transfer process
Preinvestment services	Technological feasibility Economic feasibility Social and environmental impact	Information on state-of-the-art technologies Ability to differentiate between alternative techniques Information on economic optimization methods; ability to carry out market and product analyses Knowledge of law, ecology, architecture, etc.	Recruitment of personnel with up-to-date knowledge External consultants Prior experience Relations and collaboration with R & D institutions Systematic flow of information on changes in technology Information from suppliers	Identify needs, local conditions and constraints Technology search Assess different technological possibilities
Process and technological services	Development of process know-how and manufacturing process technology	Knowledge of fundamental technologies in area Optimization studies	Laboratory testing Pilot plant testing Relations and collaboration with local and foreign research and development institutions Learning by searching Core personnel and external consultants Meetings, seminars, academic and professional associations Information from suppliers Feedback from clients	Bargaining with foreign technology suppliers Assimilation and diffusion of technology Assimilation and adaptation of technology to local conditions Innovation Final choice of technology for large-scale production
Project implementation services	Acquisition of technology Elimination of problems and efficient execution of project	Job experience Knowledge of technology involved, to enable on-the-spot elimination of bottlenecks Knowledge of local supply conditions	Core personnel and external consultants Recruitment of able personnel Records of earlier jobs Information from suppliers Learning through collaboration System performance feedback Learning by doing	Bargaining with foreign technology suppliers Assimilation and diffusion of technology
Inspection and quality control services	Improvement and standardization of quality of product to satisfy requirements of export and national markets	Knowledge of international quality standards Knowledge of quality control technologies, handling and transportation technologies Knowledge of suppliers and their specifications Knowledge of equipment	Feedback from clients Meetings, seminars External consultants Core personnel Laboratory testing	Learning by doing Innovation
Operation and maintenance services	Trouble-shooting and elimination of production-related problems	Job experience Knowledge of technology involved, to enable on-the-spot elimination of bottlenecks	System performance feedback Learning by operating Long experience, low turnover of personnel	Learning by doing Adaptation of technology Innovation

Source: Part of the information in this table was developed from Carliene Brenner and Celik Kurdoglu, *Mastering Technology: Engineering Service Firms in Developing Countries*, OECD, 1988, and A.K. Malhotra, *op. cit.*, 1980.

2) Technological capabilities and learning in an ESF

ESFs can develop technological capabilities in one or more of the five categories of services. Many will only specialize in certain areas, but it is important to emphasize that, potentially, ESFs can cover all aspects of an investment project.

Development of technological capabilities through ESFs depends on five factors. They are i) the quality of the national and international network of research institutions and suppliers of technology. This network ensures the up-dating of technological knowledge and access to external consultants (Figure 1 indicates the links between the ESF and the national and international technology market which allow different national and international sources of scientific, technical and economic knowledge to be gathered together and transformed into specific projects); ii) *experience* from prior projects; iii) the quality of *human resources* and the capability to broaden the knowledge of key personnel through missions, seminars, training programmes, etc.; iv) sufficient *economic resources* to hire qualified personnel on a permanent basis and/or as consultants, install laboratories, pilot plant facilities, etc.; and v) sufficient *demand* for their services.

The advantage of ESFs over manufacturing firms is that they are able to build up technological capabilities faster. This is because ESFs can be selective in their learning process and because of the "disembodied" nature of their services.⁶ Knowledge in ESFs is "person-specific", that is, closely related to qualified personnel with a specialized domain. In manufacturing enterprises, in contrast, knowledge is "firm-specific" and dictated by the system of production. Knowledge has to be worked into the memory of the organization, routines, machinery, and process blueprints, which is a slow and costly process.

The remainder of this section will discuss the specific benefits of local ESFs for industrial de-

velopment and technology transfer in developing countries and the reasons why there are so few capable ESFs in developing countries.

3) ESFs and developing countries

ESFs can play a crucial role in industrial development. Their strategic position in the economic system links producers with both technology suppliers and research and development institutions in such a manner that optimal investment decisions can be achieved.

In a Third World context, competent domestic ESFs with a knowledge of local conditions can help to obtain more appropriate technological solutions, clearly delineated investment packages and efficient absorption of foreign technology and foreign consultancy inputs (Aráoz, 1981, p. 11). Bargaining power *vis-à-vis* foreign technology suppliers may be strengthened, and a reduction in overall costs of projects is also likely, as a higher proportion of cheaper local inputs can be used.

This will give favourable long-run socioeconomic impacts that go beyond the limits of a specific project. The greater use of local inputs creates demand within the country for capital goods, components, technology and services. Knowledge may be spread more effectively among enterprises. The fact that ESFs themselves provide a wide range of services for numerous technology users and suppliers also makes them specially relevant in a Third World context because it ensures full utilization of scarce qualified human resources. Nevertheless, the truth of the matter is that in many developing countries domestic ESFs tend to be weak, so that demand is geared to an important extent towards foreign ESFs (UNCTC, 1989, p. 19).

The reasons usually cited to explain why foreign ESFs are given preference in developing countries are:

i) local ESFs have comparatively little experience. For the local investor there is a high element of risk in contracting local ESFs, as they might provide poor or inefficient consulting services, and consequently the greater experience of the foreign ESFs puts them in a stronger competitive position. As a result, domestic ESFs easily get caught in a vicious circle where no contracts are granted because they lack capabilities and

⁶ Disembodied technological change refers to change in productivity through the application of new information to an existing stock of capital, whereas embodied technological change is that associated with new investment and the introduction of new or different machinery and equipment. See Moore (1983), p. 9.

credentials and, without contracts, the ESFs are blocked from acquiring experience and developing technological capabilities through learning by doing.

ii) the learning process and buildup of technological capabilities is long and costly. As pointed out by Cooper, if the local ESF had a sufficiently long time horizon, it might decide to compete against foreign competitors by offering lower prices and extensive guarantees. Doing this would involve heavy losses in the short run, but as the firm gained experience through learning by doing it would eventually be able to compete profitably (Cooper, 1980). The obvious problem with this is that few ESFs in developing countries are in a strong enough financial position to sustain losses for the duration of the difficult start-up phase.

iii) for local ESFs the lack of qualified local personnel is often a bigger problem than the lack of experience. This underlines the need for sufficient financial resources both to attract foreigners and to train locals.

iv) there is a certain amount of mistrust in the private sector with regard to local consulting

capabilities. Such attitudes may take a long time to change.

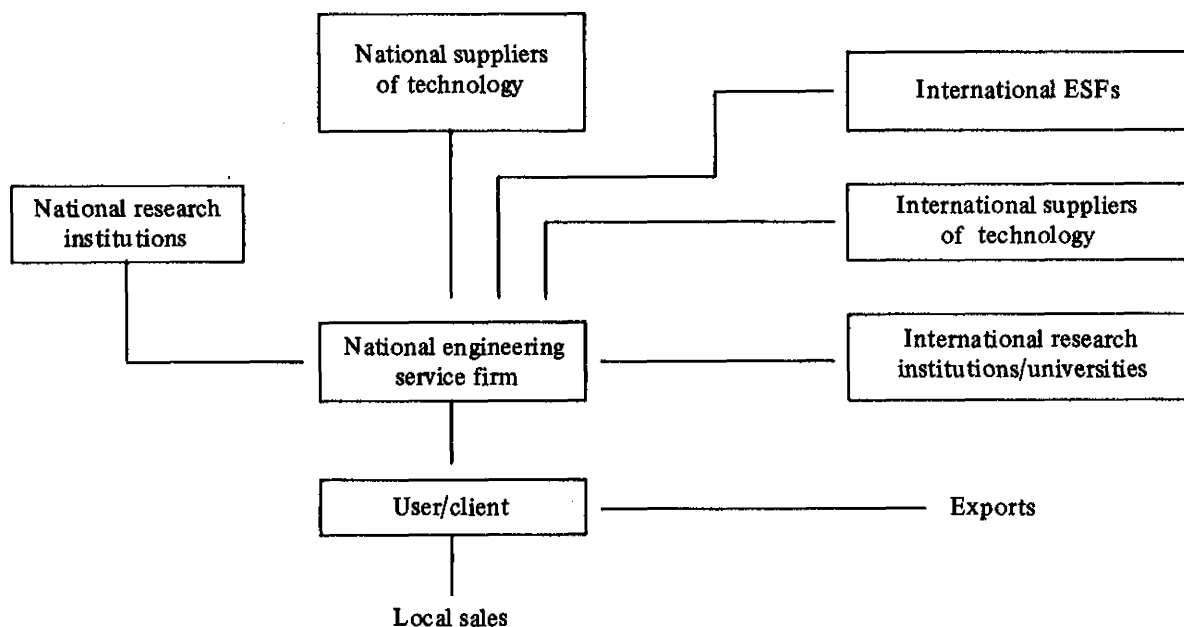
v) It is difficult and resource-demanding to build up an international network of research institutions and technology suppliers.

vi) the attitude of financial and development agencies in the industrialized countries favours the use of established ESFs from their home countries.

As mentioned earlier, there are strong arguments for building up national capacity in the field of consulting and engineering. Without it, the consequences are often inadequate technological solutions, high imports of capital goods and production inputs, and a continuing dependence on foreign know-how. Thus, many governments in developing countries have adopted legislation favoring local ESFs and giving preference to them when awarding contracts (UNCTC, 1989). On the other hand, excessive reliance on domestic ESF capabilities can cause inefficient solutions and act as a barrier to the use of more productive technology. Such a policy may burden the local ESFs with tasks which they simply are not capable of solving.

Figure 1

ENGINEERING SERVICE FIRMS AND THEIR LINKS



The fact is that there are advantages to be derived from transnational corporations in the ESF industry. They have easy access to different technology sources and invaluable knowledge, skills, experience, and international contacts that can help developing countries achieve a better performance.

The challenge to government policy is to balance the use of transnational ESFs with suitable promotion of local ESFs. This can be done, for example, by granting adequate credits to local ESFs, research institutions and equipment makers. Foreign ESFs should be used as a complement to, rather than as a substitute for, local ESFs. Mechanisms of co-operation between the two should be sought in order to make full use of local sources while utilizing the advantages of foreign consulting to transfer technology and train national consulting personnel. A possible solution is to create ESFs as joint ventures between

transnational corporations and national agents. In this fashion, the ESF can take advantage of the experience, know-how, network and prestige of the transnational corporation during the difficult start-up phase. The issues here are very similar to those that have been debated in relation to foreign capital participation in manufacturing enterprises. Accordingly, there may be disadvantages involved in joint ventures, such as solutions imposed by the parent company, unwillingness to train local personnel adequately, and reliance on foreign inputs without making a deliberate effort to adapt technology to local conditions.

The next section will be devoted to a case study of the Chile Foundation, with the aim of analysing empirically (i) how an ESF can facilitate technology transfer, and (ii) the impact of a transnational corporation on the establishment and functioning of a joint venture ESF and the development of its technological capabilities.

III

A case study: the Chile Foundation

1) *Objective and background*

The Chile Foundation (Fundación Chile) was created in 1976 as a joint venture between the US-based transnational corporation ITT and the Government of Chile. The Chile Foundation is a private, non-profit organization whose objective is "to transfer to Chile those technologies which can improve the utilization of the Nation's natural resources and productive capacity and stimulate the creation of new business enterprises based on these technologies" (Chile Foundation, 1986). The origin of the Chile Foundation goes back to the nationalization of the ITT subsidiary, the Chilean Telephone Company, during the presidency of Salvador Allende (1970-1973). No agreement on compensation could be reached, until the Government of Chile proposed to split the difference of US\$ 50 million and create the Chile Foundation as a mutually beneficial activity with both sides investing an initial capital of US\$ 25 million in the joint venture. The US\$ 50 million were made available to the Chile Foundation

according to the following schedule: first three years, US\$ 8 million annually; next six years, US\$ 4 million annually; with the remaining US\$ 2 million payable in 1985. The aim was that the Chile Foundation should gradually become self-financing by selling its services to the private sector and creating profitable production enterprises utilizing new technologies.

2) *ITT and the build-up of technological capabilities*

After its creation in 1976, the Chile Foundation was faced with the typical problems of an ESF in its start-up phase. The Foundation had no experience, lacked appropriate technological capabilities, and was mistrusted by the Chilean business community, especially because of its association with the public sector.

This section attempts to show, in a general way, how the Foundation, with the assistance of ITT, succeeded in overcoming these barriers to developing technological capabilities and gaining credibility. It focuses on the aforementioned es-

sential elements behind the technological capabilities of an ESF: human resources, experience, network, laboratories and test-plant facilities.

a) *Human resources*

The initial staff of the Foundation consisted of five experts from ITT: a food research and development executive (the first Director-General), a food technologist, a nutritionist, a chemical engineer with background in the United States Department of Agriculture, and an ITT telecommunications specialist (Meissner, 1988, p. 12). Qualified Chileans were also recruited, and by the end of 1976 the Foundation employed 17 persons full-time. A big advantage for the Foundation has been the availability of well-qualified local technical personnel with international experience, and Chileans now constitute the vast majority of the permanent staff. By 1990 the professional staff had grown to 90 (excluding staff in subsidiaries). Engineers make up the largest single group (see Table 2 below). It was decided from the beginning that Chileans should gradually manage all activities of the Foundation, and in-house training programmes are provided by ITT to prepare qualified candidates for key management positions (Meissner, 1988, p. 12). Learning-by-training is generally given high priority, and continuous development of the staff's technical and management capabilities is undertaken. Thus, during 1987 the professionals received a total of 4,100 hours of training, and 38 management-level employees undertook missions to overseas companies and technology centres which collaborate with the Foundation (Chile Foundation, 1987).

The Foundation encourages its staff to attend international conferences and seminars, both to gain knowledge and make personal contacts, and it is a very active organizer of seminars in Chile, which is also a way to introduce new ideas to the Chilean business community and promote the Foundation. Finally, the Foundation makes extensive use of external consultants to provide knowledge and know-how that its own staff do not possess themselves.

b) *Experience*

The initial projects of the Foundation were primarily oriented towards improving the quality of processed fruits and vegetables, providing

Table 2
PROFESSIONAL STAFF OF THE CHILE
FOUNDATION, APRIL 1990
(EXCLUDING SUBSIDIARIES)

	<i>Number</i>
Postgraduates	
Non-engineers	21
Engineers (in the fields of agronomy, food, fisheries, forestry, chemicals, industrial technology and business studies)	38
Subtotal	59
Technicians with a university degree	31
<i>Total</i>	90

technical assistance in the area of industrial sanitation and hygiene for food processing plants, and giving technical assistance to the edible oil industry, including ways to refine fish oil and to improve the utilization of other by-products (Chile Foundation, 1985). These early ventures were characterized by vagueness of objectives and a lack of focus on the technological aspects. The Foundation had difficulties in winning the confidence of the private sector, and few projects were carried beyond the exploratory stage. In view of these problems the Foundation decided to gain experience and build up its technological background by initiating entrepreneurial projects itself. The idea was to identify new production activities that could benefit from new technologies, then acquire and adapt the technology. Once the technology was assimilated the Foundation would undertake the commercial production and marketing of the products through a subsidiary. When the subsidiary became profitable it would be sold, thereby completing the technology transfer process. By demonstrating the viability of the technology and the business opportunities to the private sector, the Foundation would subsequently find it easier to sell technical, management and marketing assistance. In this way the Foundation has established 7 subsidiary enterprises, mainly in the area of agriculture and fisheries. One project, *Salmones Antártica S.A.*, has completed the technology transfer cycle and was sold in 1988 to the Japanese consortium Nippon Suisan Kaisha for US\$ 21 million. As soon as *Salmones Antártica* proved to be success-

ful, the Foundation's technical assistance branch began promoting other ventures making the technology available to interested firms. In the next section of this article, the Salmenes Antártica project is studied in detail in order to analyse how the Foundation approaches technology transfer, builds up its technological capabilities and provides technical assistance to the private sector.

c) *Network*

The association with ITT has provided access to a worldwide network of consultants and technology suppliers. Upon request, a liaison officer at ITT supplies the Foundation with information on technology suppliers, bibliographies, consultants, etc. A formal technical assistance contract has been established between ITT and the Foundation, whereby the Foundation undertakes to i) reimburse ITT for all direct costs incurred in providing technical information (such as travel and subsistence of the personnel providing technical assistance at the Foundation's premises); ii) keep data confidential until otherwise authorized by ITT; and iii) inform ITT of any invention, discovery or improvement that may result from research using substantial amounts of ITT technical information. ITT is free to use such new knowledge, reimbursing the Foundation for all direct expenditures related to the transfer of the information.

d) *Laboratory and test-plant facilities*

The Foundation has devoted substantial resources to the establishment of laboratories and test-plant facilities. This has also been an important source of knowledge.

It is difficult to assess exactly why the Chile Foundation has been able to develop up-to-date technological capabilities in different fields of activity. Predictably, a number of projects have failed, but generally speaking the organization has been very enterprising, and most of the projects have had a substantial creative content and been successful in transferring new technologies to Chile. According to the Foundation itself, five important reasons can be cited to explain why the Foundation has been able to develop its technological capabilities:

i) The educational preparation and experience of both the staff transferred from ITT to

Chile and the professionals available in Chile itself.

ii) The ample financial resources at the Foundation's disposal during the initial stage of its existence. This allowed for investment in human resources by recruiting highly-qualified permanent staff, making extensive use of consultants, ensuring continuous updating of the capability of its personnel through training and study courses abroad, and installing laboratories and pilot plant facilities. Furthermore, this solid financial basis made it possible to pursue a bold entrepreneurial strategy and gain the necessary experience.

iii) Access to the ITT network, and the assistance of ITT in negotiations with technology suppliers and the private sector in Chile.

iv) The management principles used, which are largely based on the ITT Research and Development Case Method. The fundamental pillar upon which this case method rests is management-by-objectives, with the basic principles of flexibility and control. In the Foundation, the system is implemented in the following way:

The period from project idea to implementation is made as short as possible. When a staff member receives an outside request for technical assistance or wishes to pursue an idea, a project proposal is elaborated, which is presented to the Board of Directors and the Department of Finance and Administration. If the project is approved, a detailed budget for all resources needed is authorized. The staff member is granted considerable autonomy during project implementation, but management-by-objectives involves strict budget planning and control. In the Chile Foundation, each project or case manager must make a monthly report on the advance of the project and the resources used on personnel, travel, consultants, materials, laboratory work, machinery, telephone/fax communications, seminars, and miscellaneous items. The system implemented at the Chile Foundation allows for some flexibility in changing the authorized case budget, if this can be justified convincingly to the Director-General or Board of Directors.

v) The Foundation is business oriented in the sense that the projects undertaken must be profitable. Due to the special circumstances sur-

rounding its creation, the Foundation as a whole is a non-profit organization, but the specific projects have to be economically feasible. Thus, a big effort is also made to seek out joint venture entrepreneurs willing to risk capital and to transfer new technologies to Chile.

A marketing department was established to strengthen staff capabilities in developing and implementing strategies for the marketing of the products and services offered by the Foundation. Among the tools used are short courses, workshops, seminars, publications, visits to the Foundation headquarters and enterprises, and public relations with the mass media.

It should be reiterated that ITT was of fundamental importance in the development of the Chile Foundation's technological capabilities. The provision of ample financial resources, transfer of personnel from ITT headquarters, introduction of ITT management methods and the access granted to the ITT network made possible a rapid build-up of capabilities. The outcome has been the recruitment and continuous training of qualified Chilean personnel, use of consultants, construction of laboratories and test-plant facilities and, finally, development of the Foundation's own national and international network through missions and the organization of seminars in Chile.

In the next section the Salmenes Antártica project will be analysed in detail to show how the Foundation has transferred technology and built up technological capabilities in a specific field. The project will be analysed through the different stages of the technology transfer process: a) preinvestment studies (problem identification); b) choice and adaptation of technology to local conditions (process and technological studies); and c) assimilation and diffusion of technology (project implementation).

3) *Salmenes Antártica: an example of effective technology transfer*

a) *Background (preinvestment studies)*

Chile is one of the most important fishing nations in the world, with a catch of around 5 million tons a year, but most of the catch is transformed into low-grade fish meal for animal consumption. Consequently, the Chile Foundation

decided at a very early stage to explore the possibilities of transferring fishery-related technologies to increase the degree of processing of maritime resources, making the sector more productive and profitable.

One of the first projects of the Foundation was to explore the feasibility of establishing salmon fisheries in Chile. Salmon is one of the most highly-appreciated fish in the world and, therefore, could be an important source of income on export markets.

Fish of the salmon family are not native to the Southern Hemisphere, but Southern Chile's climate and coastal geography, with fiords, islands, and protected bays, is very similar to the conditions prevailing in the Northern Hemisphere, where salmon live and reproduce naturally. Furthermore, the southern waters of Chile are clean, unpolluted, clear, fresh and oxygen-rich. Water temperatures and climatic conditions are also milder than in the Northern Hemisphere, where the winter growth rates of salmon are low and living conditions severe.

In short, Chile seemed ideal for raising salmon on a commercial scale. Two technologies were available for the acclimatization of salmon to Chilean waters.

The first is "*Ocean ranching technology*". In the Northern Hemisphere salmon spawn in fresh waters and spend the first part of their life in the streams or lakes where they were born. When a salmon fry (called a smolt) reaches one year of age it migrates to the ocean, where it grows and matures. When ready to reproduce, a powerful instinct of the salmon forces it to return to the streams where it was born in order to mate.

This circuit is utilized in the ocean ranching technology. Initially, eggs are hatched and the salmon are raised to the smolt stage in fresh water under controlled conditions. Afterwards the salmon are released to mature in a natural oceanic environment. When the adults return to their original place of release to mate the fish are captured.

The ocean ranching technology is widely used along the west coast of Canada and the United States. In 1980, salmon landings in these areas totalled 400,000 tons. With a coastline of 5,000 km., an average of 80 tons of salmon was produced per kilometre. If the Chile Foundation could achieve a production of 40 tons per linear

km., the 1 700 km. of "salmon coastline" could produce 68,000 tons of ranch salmon annually. At a price of US\$ 3 per kg., that would amount to over US\$ 200 million (Meissner, 1988, p. 21). There are, however, three problems related to ocean ranching: i) it is slow; ii) it is risky, because 1-1.5 per cent of the mature salmon must return merely in order to pay for the raising of the smolts, and iii) the returning salmon are in the public domain, so that anybody with a fishing license can go after them.

The second technology is "cage cultivation" or "salmon farming". Salmon farming involves the continuous rearing of salmon in enclosures throughout their life cycle, from eggs to harvest. The eggs are obtained from abroad, from a local hatchery, or by the artificial fertilization of self-owned brood stock. The latter requires the forming and keeping of brood fish and genetic selection. When the newborn salmon reach the smolt stage and start swimming they are transferred to a floating cage where they mature. The growth rate will depend on the salmon species farmed, the genetic strain, the amount and quality of fish feed, cage type and "fish management".

Over the last 25 years, commercial cage cultivation of salmon has been well established as a viable business in several countries around the world. In 1985, Norway (now the largest producer), harvested 28 000 tons of farmed salmon. Japan and the United States, for their part, harvested approximately 7,000 tons (Lindbergh, 1987). Cage cultivation has primarily been successful because high-quality fresh fish can be provided at times of the year when freshly captured ocean salmon are scarce or unavailable. Furthermore, the growers of farmed fish can grow the most sought-after species and to a significant degree configure the fish to the preferred color and fat content.

Initially, the Chile Foundation tried ocean ranching and released salmon on several locations in the Tenth Region of Chile. For as yet unknown reasons, however, the rate of returned salmon was very low. It was then decided to change to cage cultivation. The general advantages were also considered to be higher and the technological content was more challenging.

b) *Choice and adaptation of technology (process and technological studies)*

In 1981, the Chile Foundation decided to carry out a pilot project on the cage cultivation of salmon in fresh water with the aim of studying the technical and economic feasibility of salmon farming in Chile. Among the problems that had to be solved were: choice of specific cage design and technology, production of feed, identification and control of diseases, the study of currents, oceanography, site selection and supply of salmon eggs.

The first step taken was to acquire the technology and installations to produce salmon eggs and grow salmon fingerlings to the smolt stage.

In order to gain time, this was done by buying Domsea, a small United States-owned hatchery in Curaco de Vélez, in the southern part of Chile. There, salmon fingerlings were grown in fresh water to the smolt stage and then released, with the company seeking their return via the ocean ranching technology. Under the ownership of the Foundation, the company was renamed Salmenes Antártica, and used as a pilot project site for cage cultivation.

The next step was to choose a production system and adapt the technology to Chilean conditions. First, staff members were sent on international missions to visit different salmon farms and attend seminars to make contacts and search for the appropriate technology. Several options were available. The most advanced and capital-intensive cage technology was found in Norway. But the technology was very costly and, furthermore, the Norwegians were reluctant to sell their equipment and know-how to a potential competitor. The choice fell on net pens or cages developed in the United States. The nets are normally hung from a square or rectangular structure that is supported by floats. Sizes vary from a few m³ to 50 m³. United States consultants from Seattle were hired to assist in the assimilation and adaptation of the production system to Chilean conditions. A major change in this respect was to make the fundamental structure out of wood instead of steel, in this way utilizing a cheap and abundant natural resource of Chile.

To achieve good quality and high growth rates, special attention had to be given to the feeding of the fish stock. Feed is the highest single

cost item involved in rearing salmon in cages and accounts for up to 40% or more of total costs up to harvest time (Lindbergh, 1987). The predominant constituents of standard salmon feed are fish meal, fish oil, carbohydrates, vitamins and binding agents (Romero, 1988). With the increased production of farmed fish, the animal feed industry has expanded and developed a number of fish feed manufacturing processes which involve the making of different forms of feed and sizes of feed particles. If salmon ranching was to be profitable in Chile, it was necessary for the Foundation to develop fish feed that made use of the large volumes of low-cost fish meal and oil available in the country. Through experiments with different fish feed mixtures at the Foundation's pilot plant, a mixture was found which used exclusively local resources. The colour of the salmon meat is a result of the diet, so a special problem for the Foundation during the pilot project was to develop feed that would produce the attractive pink colour of salmon filet. This was solved by mixing Antarctic krill into the fish feed.

During the pilot project a number of other problems were solved, such as fish feeding techniques, disease control, changes in currents and water temperature, handling of eggs and smolts, selection of species and fish behaviour in cages. The appropriate technologies relating to cage cultivation were adapted and modified by way of experiments (learning-by-doing), use of national and international consultants (learning by hiring) and training of permanent staff at ranch farms and fish technology centres abroad. The Foundation had an average of 10 staff members working on the salmon pilot project.

c) *Diffusion of technology (project implementation)*

In 1983, the success of the pilot project encouraged the Foundation to expand the import substitution production of salmon eggs and initiate commercial cage cultivation. Due to the favourable demand for Coho salmon, the internal rate of return was estimated to range from 36% with an annual output of 100 tons to 33% for an output of 600 tons (Meissner, 1988, p. 22).

The Foundation (Salmones Antártica) acquired four new farm sites and a large-scale expansion plan was initiated at these sites. In addition, Salmones Antártica built three new

hatcheries, a new feed plant and a salmon packing complex. The first commercial harvest of 200 tons was projected for 1986-1987, increasing to 400 tons thereafter. Accumulated losses were expected to peak at some US\$ 1 million by 1985, and the first positive cash flow of about US\$ 100 000 was projected for 1988, to be consolidated at US\$ 2.5 million annually by 1990 and thereafter (Meissner, 1988, p. 22).

The implementation of commercial cage cultivation was carried out according to the project objectives, and in 1988 profits were generated. Thus, the technology transfer cycle was completed, and when the Foundation offered Salmones Antártica for sale it was bought by the Japanese seafood processing firm Nippon Suisan Kaisha for US\$ 21 million (Lichmann, 1989, p. 72).

d) *Technical assistance*

The Foundation's pioneering salmon project received a significant response in Chile. Between 1983 and 1985, 24 new salmon farms were initiated and total Chilean salmon production increased from 94 tons in 1983 to 1,144 tons in 1986, reaching 4,208 tons in 1988 (Wurmann, 1990). The technological capabilities developed at the Foundation were such that it was possible to provide technical assistance to more than half of the new projects. The Foundation is still developing engineering and technical plans for several firms and encouraging others to become interested in salmon production. These technical assistance projects can be summarized as follows:

- i) assistance in the technical and financial aspects, design and start-up of salmon farming projects.
- ii) assistance in the design and building of feed plants.
- iii) assistance in the design and start-up of salmon packing plants.
- iv) assistance in the control and prevention of disease.
- v) assistance in the development of quality standards for Chilean salmon.
- vi) organization and sponsorship of seminars to inform the private sector and stimulate investment in the industry (Chile Foundation, 1987b, p. 207).

e) *Conclusion of the case study*

The Salmones Antártica project is a very eloquent example of effective technology transfer. It shows how the Chile Foundation first of all identified a potential business opportunity: the application of new technology to develop salmon farming in Chile. A conscious strategy was followed to search for the most appropriate technology and invest the necessary time and resources in assimilating and adapting it to local conditions. This was of fundamental importance, because it was during the adaptation process that the comparative advantages of Chilean salmon

farming were developed. For example, the use of cheap and abundant local resources for fish feed and cage construction have contributed significantly to the international competitiveness of Chilean salmon. Another important lesson to be derived from the Salmones Antártica project is the feasibility of investing in the development of technological capabilities and then selling the know-how (intangible assets) to third parties. Once the Foundation had built up technological capabilities in salmon farming and successfully diffused the technology, technical assistance provided to new projects became a major source of income and a way to expand activities.

IV

Conclusions

In many developing countries, extensive use has been made of imported technology as a basis for the establishment of new industries. Licenses and other forms of technology transfer have fulfilled a demand for technology that could not be met immediately by local technological capabilities.

The present study has emphasized that if foreign technology acquisition is to induce technical change and raise productivity of the recipient enterprise it requires an *active* technological strategy on behalf of the recipient. First, the enterprise must carry out an active search for alternative technology sources in order to track down the most appropriate technology and diminish the vulnerability that comes with overreliance on a single or few sources. Second, time and resources must be invested in skill formation and organizational changes in order to assimilate and effectively adapt the technology to local conditions. The latter is essential in order to develop comparative advantages and make the production internationally competitive. Third, in order to implement the technology for large scale production the enterprise must develop contacts with appropriate suppliers of equipment and materials, improve management capabilities and increase its own capacity to bargain with local authorities.

As mentioned in the introduction, it is very difficult for policy makers in developing countries to directly help national enterprises to accomplish all these requirements in order to transfer foreign technology effectively. The task of governments is, first of all, to create a macroeconomic environment that induces local enterprises to undertake an active technological strategy. The exposure of local enterprises to a certain degree of foreign competition is a good thing in this respect. Perhaps even more important, governments should support the development of a local scientific and technological infrastructure. The technological effort of local enterprises relies above all on the existence of a pool of trained workers and technicians and on publicly-funded R & D centres.

In the area of direct assistance to local enterprises receiving foreign technology, this article suggests that one solution is the creation of design engineering capabilities (engineering service firms). Their experience and strategic position in the economic system links producers with both technology suppliers and research and development institutions to ensure optimal investment decisions. Competent local *esrs* with a knowledge of local conditions can also help enterprises to absorb and adapt foreign technology more efficiently. In many developing countries,

however, there are few domestic ESFs because of the many barriers to entry into the engineering services market. This is because many developing countries do not have the human resources to conduct engineering services, and it is a costly and lengthy process to hire and train the most qualified personnel. It is also costly and resource-demanding to build up a useful national and international technological network. Another barrier to many Third World ESFs is the difficulty of gaining private sector confidence and obtaining the credentials and necessary experience to further develop their capabilities. An ESF formed as a joint venture between a national agent (possibly the public sector) and a transnational partner that possess the needed skills and experience could be one solution for overcoming these barriers.

In the present study this idea has been ratified by analysing the achievements of the Chile Foundation: an ESF joint venture between ITT and the Government of Chile. The Foundation has successfully carried out projects in various fields related to technical assistance, information services and quality control, and it has also initiated full-scale commercial production through subsidiaries. The latter is not an activity normally associated with ESFs, but it has provided a way of gaining experience and promoting new technologies in the Chilean private sector. The philosophy has been to identify new business opportunities that could benefit from foreign technology, transfer that technology from abroad, learn how to master it, and finally demonstrate the viability of the new technology by undertaking full-scale commercial production. Once profitable, the Foundation encourages the private sector to utilize the same production methods and provides the needed technical assistance.

The experience of the Foundation has confirmed that it pays to invest time and resources in adapting the technology properly, because it is mainly during this crucial phase in the tech-

nology transfer process that the comparative advantages of the project are developed. As shown in the case study, ITT played a decisive role in the development of the Foundation's technological capabilities by transferring personnel from ITT headquarters, introducing management methods, granting access to its global technological network and, finally, training local personnel. ITT also provided the Foundation with the necessary credibility and support in negotiations with third parties.

It has become an "explicit policy goal" to gradually make the Foundation independent of ITT, and now, 15 years after its creation, the Foundation primarily relies on its own contacts and technological capabilities. Apart from ITT's support, other important factors in the development of technological capabilities were the ample financial resources available during the start-up phase and the quality of the educational background of the professionals available for recruitment in Chile.

The final question to be addressed is the general validity of this case study: that is, whether the same scheme can be copied in other developing countries. The special circumstances surrounding the creation of the Foundation, and the interest of ITT in improving its reputation in Chile, make the Chile Foundation a very special and exceptional case. It may be difficult to convince other TNCs to invest US\$ 25 million in a joint venture with the dubious objective of transferring technology to a Third World country. But an obvious lesson to be learned from the case study is that a Third World government and a TNC *can* enter a mutually beneficial arrangement. In this case, the skills, experience and contacts provided by a TNC, together with the availability of skilled local personnel and a long-term investment in the development of technological capabilities, did result in effective technology transfer, together with the creation of profitable entrepreneurial projects.

Bibliography

- Aráoz, Alberto (ed.) (1981): *Consulting and Engineering Design in Developing Countries*, Ottawa, International Development Research Centre (IDRC), p. 11.
- Arrow, K. (1971): *Essays in the Theory of Risk Bearing*, Chicago, Markham.
- Caves, Richard E. (1982): *Multinational Enterprises and Economic Analysis*, Cambridge, Cambridge University Press, Chapter 1.
- Chile Foundation (Fundación Chile) (1985): *Accomplishments 1976-1985*.
- _____ (1986): *Annual report 1986*, Santiago, Chile, p. 3.
- _____ (1987): *Annual Report 1987*, Santiago, Chile, p. 10.
- _____ (1987b): "La industria del salmón en Chile: realidad y perspectivas", paper presented at the seminar "Perspectivas de la Salmonicultura en Chile", organized by the Chile Foundation, Santiago, Chile, March 17-19, p. 207.
- Cooper, Charles (1980): Policy interventions for technological innovation in developing countries, *World Bank Staff Working Papers*, No. 441, Washington, D.C., The World Bank, December, p. 8.
- Dahlman, Carl, Bruce Ross-Larson and Larry E. Westphal (1987): Managing technological development: lessons from the newly industrialized countries, *World Bank Staff Working Papers*, No. 717, Washington, D.C., The World Bank, January.
- Dahlman, Carl and Francisco C. Sercovich (1984): Local development and exports of technology: the comparative advantages of Argentina, Brazil, India, the Republic of Korea and Mexico, *World Bank Staff Working Papers*, No. 667, Washington, D.C., The World Bank.
- Dahlman, Carl and Larry Westphal (1983): The transfer of technology. Factors in the acquisition of technology, *Finance and Development*, vol. 20, No. 4, Washington, D.C., The International Monetary Fund (IMF), December.
- Dunning, John H. and John A. Cantwell (1986): "The changing role of multinational enterprises in the international creation, transfer and diffusion of technology", paper presented at the Conference on Innovation and Diffusion in Venice.
- Fransman, Martin and Kenneth King (eds) (1987): *Technological Capability in the Third World*, London, Macmillan, and Jorge M. Katz (ed.) (1987): *Technology Generation in Latin American Manufacturing Industries*, London, Macmillan. See the case studies in these works.
- Herbert-Copley, Brent (1989): "Technical change in Latin American manufacturing firms: review and synthesis": paper presented at the Annual Conference of the Canadian Association of Latin American and Caribbean Studies (CALACS), Ottawa, October, p. 10.
- Lichmann, Kerry (1989): Chile's salmon strategy, *Seafood Business*, vol. 8, no. 4, July-August, p. 72.
- Lindbergh, John E. (1987): "The economic potential for the commercial production of Atlantic and Pacific salmon in Chile", paper presented at the seminar "Perspectivas de la Salmonicultura en Chile", organized by the Chile Foundation, Santiago, Chile, March 17-19.
- Malhotra, A.K. (1980): *Consulting and Design Engineering Capabilities in Developing Countries in Science and Technology for Development*, a selection of background papers for the main comparative report of the STPI project, Ottawa, International Development Research Centre (IDRC).
- Mansfield, E. (1968): *Economics of Technological Change*, New York. Cited from François Chesnais, "Science, Technology and Competitiveness", *STI Review*, No. 1, Paris, Organization for Economic Co-operation and Development (OECD), p. 93.
- Meissner, Frank (1988): *Technology Transfer in the Developing World: the Case of the Chile Foundation*, New York, Praeger.
- Moore, Frederick T. (1983): Technological change and industrial development: issues and opportunities, *World Bank Staff Working Papers*, No. 613, Washington, D.C., The World Bank, p.9.
- Oman, Charles (1989): New forms of investment in developing country industries: mining, petrochemicals, automobiles, textiles, food, *Development Centre Studies*, Paris, The Development Centre of the Organization for Economic Co-operation and Development (OECD).
- Roberts, John (1973): Engineering consultancy, industrialization and development in science, technology and development, in Charles Cooper (ed.), *Science, Technology and Development*, London, 1973, cited from Carlene Brenner and Celik Kurdoglu, *Mastering technology: engineering services firms in developing countries*, *Development Centre Papers*, Paris, Organization for Economic Co-operation and Development (OECD), 1988, p. 11.
- Romero, Juan José (1988): "Efectos de variantes de elaboración sobre la calidad de alimentos para salmónes", paper presented at the seminar "Técnicas de Cultivo y Manejo del Salmón: Desarrollos Recientes", organized by the Chile Foundation, Santiago, Chile, October 19-21.
- UNCTC (United Nations Centre on Transnational Corporations) (1987): *Transnational Corporations and Technology Transfer: Effects and Policy Issues*, New York, United Nations Publication, Sales No.: 87.II.A.4.
- _____ (1989): *Transnational Corporations in the Construction and Design Engineering Industry*, New York, United Nations.
- Vernon, Raymond (1988): Key factors in the application of industrial technology in developing countries, *EDI Working Papers*, The World Bank.
- Wurmann, Carlos (1990): Salmon farming in Chile: from reality to dreams?, *INFOFISH International*, No. 1, January-February, p. 42.

Debt conversion and territorial change

*Antonio Daher**

The external debt of Chile originated in various economic and social sectors and its territorial distribution was highly concentrated. The conversion of that external debt has involved a sectoral and regional reassignment of resources which has been reflected in marked territorial change. There is no direct correspondence between the economic and social geography of the debt on the one hand and that of the conversion process on the other.

In Chile, the trend towards greater economic openness in general and the conversion of the debt in particular have made possible greater —albeit uneven— integration of the regions of the country, as well as fuller integration into the international economy. At the same time, direct foreign investment and debt capitalization via Chapter XIX display substantial differences in sectoral additionality or substitution which are manifested in dissimilar regional behaviour within the overall process of territorial change.

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Introduction

At the beginning of the 1990s, Chile's external debt totalled US\$ 16 250 million, of which 74% corresponded to the public sector and the rest to the private sector. According to information from the Central Bank, in 1989 the debt was reduced by US\$ 1 388 million, making a total reduction since 1985 of US\$ 8 967 million.

An important mechanism in attaining this result was the conversion of the external debt. Although there are differences from one country to another, conversion generally involves the purchase by local residents or foreign investors of foreign-currency obligations of the debtor country at a certain rate of discount, for redenomination in local currency at a lower discount rate. If this operation is carried out by locally resident investors, it is equivalent to the repatriation of capital. The original debt is thus settled and the funds obtained can be used to acquire equity in local enterprises, increase expenditure on installations and equipment in existing enterprises, settle outstanding local currency liabilities, or any other authorized purpose (Lahera, 1987). These mechanisms for the prepayment of debts owed to the creditor banks operate essentially through the use of external debt promissory notes sold at a discount on the international secondary market, and also through the direct capitalization or conversion of bank loans into equity (Ffrench-Davis, 1989a).

The main means of debt conversion in Chile are those laid down in Chapters XVIII and XIX of the Compendium of International Exchange Regulations of the Central Bank of Chile. Of the total debt reduction registered between 1985 and 1989, 35.1% was due to the application of Chapter XIX and 28.2% to the use of Chapter XVIII. The percentage contribution of these two chapters to the overall reduction of the debt in 1989 was similar to their contribution in 1987 and 1988.

Chapter XVIII permits Chilean residents to purchase national debt abroad at a discount and convert it into local currency at prices freely negotiated between the new (Chilean) creditor and the debtor. For this purpose, Chilean residents can either use their own foreign exchange, repatriate funds from abroad, or purchase foreign exchange on the parallel market. Obviously, the local debtor will only carry out this transaction

if he obtains a discount for prepayment. Demand pressures on the parallel market are regulated through the Central Bank's auctions of foreign exchange quotas, which also serve to regulate the demand for and price of the debt promissory notes abroad. The Central Bank shares in the secondary market discount, since the auction price of the quotas is less than the nominal value of the converted debt (Fontaine, 1988).

Chapter XIX permits Chilean or foreign natural or legal persons residing and domiciled abroad to make investments in Chile through the purchase and use of external debt securities. The Central Bank is empowered to give them access to the foreign exchange market in order to remit the capital and profits generated by these investments to the exterior. The capital can only be remitted abroad ten years after effecting the investment, while the profits cannot be remitted before four years have elapsed, and as from the fifth year they can only be remitted in installments that do not exceed 25% of the accrued profits. The profits generated as from the fifth

year can be remitted abroad freely (Garcés, 1987).

According to information provided by the Central Bank, 332 operations under Chapter XIX had been approved up to January 1990. Of these, almost half came from four countries which accounted for almost 70% of the investments: United States (38.5%); United Kingdom (12.8%); New Zealand (11.6%), and Spain (6.6%). In contrast, two such important trading partners of Chile as Japan and the Federal Republic of Germany only contributed 1.3% and 0.6%, respectively. The share of the Latin American countries was noteworthy, however, since altogether they contributed nearly 4%.

An analysis of the investors by type shows that they consisted above all of transnational corporations and banks and investment companies. Thus, the first-named accounted for nearly 40% of the total investments authorized, while the latter accounted altogether for over 41%. At the other extreme, the share of mining, agricultural, fruit-growing and industrial companies together did not reach 10% (table 1).

Table 1
CHILE: INVESTMENTS AUTHORIZED UNDER CHAPTER XIX
UP TO 30 JUNE 1988, BY TYPE OF INVESTOR

Type of investor	Operations authorized	
	Amount (US\$)	% of total
Transnational corporations and companies associated with international groups	507 850 980	39.93
Banks	428 570 639	33.70
Investment companies ^a	95 243 584	7.49
Companies producing and marketing agricultural commodities and fruits	64 040 986	5.04
Entrepreneurs	43 644 193	3.43
Religious orders, welfare foundations and development corporations	39 863 818	3.10
Mining companies	35 900 006	2.82
Industrial companies	24 091 039	1.90
Miscellaneous	19 252 057	1.51
Multilateral bodies	7 500 000	0.59
Industrial and engineering services enterprises	5 820 340	0.46

Source: International Agencies Department, Central Bank of Chile (Montoya, 1988).

^a Multi-purpose companies with net worth of less than US\$ 50 million.

I

Sectoral evolution

The situation observed up to mid-1988 becomes clearer if we break down by sectors the figure for transnational corporations as a whole: three-quarters of that figure corresponds to companies in the industrial, forestry and fishery sectors, while the share of the mining sector continued to be extraordinarily low (table 2).

In principle, Chapter XIX did not provide for sectoral limitations or different treatment by sectors, and it permitted the acquisition of both public and private enterprises (Lahera, 1987).

If we provisionally accept the hypothesis that the sectoral destination of investments in Chile is likely to be similar to that of the sectoral specialization of foreign investors, this would make it possible to estimate the probable territorial orientation of such investments. An estimate on the

basis of tables 1 and 2 indicates that rather more than 40% of such investments would be located in the provinces and in rural areas, while the rest would be located in Metropolitan Santiago.¹ The estimate assumes an urban/metropolitan destination for tertiary sector activities and a regional and/or rural location for primary sector operations. In sectors such as industry, energy or transport, the sectoral/territorial identity is naturally more complex and probably more dubious in such global terms. Even so, it will be shown below that neither the initial hypothesis for this specu-

¹ Chile is divided into 12 regions, plus a Metropolitan Region. For the purposes of this study, the term "regions" refers only to the former.

Table 2
CHILE: TRANSNATIONAL CORPORATIONS AND COMPANIES
CONNECTED WITH INTERNATIONAL GROUPS,
BY TYPE OF ACTIVITIES

Sector or type of industry	Operations authorized	
	Amount (US\$)	% of total
Industry, forestry and fisheries	382 604 362	75.34
Marketing companies and trade in general	29 785 444	5.87
Energy sector	26 106 342	5.14
Informatics, communications and transport	17 821 395	3.51
Mining	15 000 000	2.95
Chemicals, pharmaceuticals and photography	12 541 965	2.47
Motor vehicles	8 000 000	1.58
Toiletries and similar	5 650 000	1.14
Soft drinks	5 349 692	1.05
Packaging	2 800 000	0.55
Engineering and construction	2 191 780	0.40
<i>Total</i>	<i>507 850 980</i>	<i>100.0</i>

Source: International Organizations Department, Central Bank of Chile (Montoya, 1988).

Table 3
CHILE: MAIN INVESTMENT OPERATIONS AUTHORIZED UNDER
CHAPTER XIX, AS AT 15 MARCH 1989

Date	Millions of dollars	Foreign investor	Country of origin	Local enterprise
20.07.88	173.9	Shell Overseas Invest. BV	Netherlands	Forestal Shell Ltda.
28.01.87	164.0	Carter Holt Harvey y Co.	Cook Islands	Carter Holt Harvey Ltda. Chile
07.01.87	68.0	Security Pacific National Bank and others	United States	Security Pacific Chile and others
20.07.88	64.9	Scott Worldwide Inc.	United States	Scott Worldwide Chile y Cía. Ltda.
11.11.87	61.6	Fletcher Chal. Chilean Inc. Ltd.	Cayman Islands	Tasman Forestal S.A.
26.08.87	59.3	Fletcher Chal. Chilean Inc. Ltd.	Cayman Islands	Tasman Forestal S.A.
02.12.87	59.0	Carter Holt Harvey	Cook Islands	Carter Holt Harvey Ltda. Chile
18.01.89	53.0	Santiago de Chile Hotel Co.	Panama	Hotel Corporation of Chile S.A.
22.12.86	48.6	Banesto Banking Corp.	United States	Cía. Industrial S.A.
08.01.86	46.3	B.T. (Pacific) Ltda. and others	United States	B.T. (Pacific) Ltda. y Cía.
20.07.88	46.0	La Serena (Chile) Invest. Ltd.	Bahamas	Inv. La Serena Ltda.
09.12.87	30.0	Lao Minerals Inc.	United States	Minera Lao Chile S.A.
27.01.88	26.3	Citi Fishing Inv. Chile Ltda. and another	Bahamas	Inv. Citibosques Ltda. and another.
09.11.88	25.0	Pacific Telephone Holdings and another	United States	Inv. Telefónicas Ltda. and others
12.05.89	23.3	Nippon Suisan Kaisha Ltd.	Japan	Direct Investment in Salmones Antártica
15.03.89	22.3	Spie Batignolles S.A.	France	Valle Nevado S.A.
23.11.88	21.2	Agroindustrial Development	United Kingdom	Agro Industrial Investment, Chile
13.07.88	20.1	Select Andean Holdings	United States	Inv. Selecta Ltda.
21.09.88	20.0	Corp. Mapire Cía. Intl. De R.	Spain	Mapfre Chile S.A.
Subtotal	1 032.8	(49.88%)	19 operations	
Total	2 070.4	(100.00%)	246 operations	

Source: Prepared by the author on the basis of LATINFINANCE, 1989.

lation nor its territorial implications are in line with reality.

It is therefore necessary to review the facts. As at October 1986, more than 40% of the operations carried out involved pension funds and

insurance companies, located above all in the capital. Between 1986 and 1987, of the 46 main transfers of ownership under Chapter XIX, 48.8% concerned private enterprises, 19.5% public enterprises, 17.4% banks, and 8.7% insurance com-

Table 4
CHILE: CUMULATIVE PERCENTAGE SECTORAL DISTRIBUTION
OF INVESTMENT UNDER CHAPTER XIX

Sectors	As at October 1986	As at May 1987	As at December 1987	As at August 1988	As at March 1989	As at December 1989
Agriculture	} 3.9	} 9.2	9.5	10.8	} 27.7	9.3
Forestry			16.8	16.9		11.2
Fisheries	5.8	2.3	7.9	6.7		4.2
Mining	1.5	0.8	5.0	8.7	9.0	11.2
Primary commodities	11.2	12.3	39.2	43.1	36.7	35.9
Manufactur- ing	16.4	17.3	15.2	23.0	34.4	37.9
Services ^a	51.4	25.5	22.8	28.4	22.9	20.2
Others ^b	21.0	44.9	22.8	5.5	6.0	6.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Millions of dollars	188.3	483.6	954.4	1 226.1	2 008.9 ^c	3 069.4

Source: First column: Lahera, 1987. Second column: Errázuriz, 1987. Third column: Elortegui, 1988. Fourth column: Montoya, 1988. Fifth column: LATINFINANCE, 1989. Sixth column: Central Bank of Chile.

^a Financial services, insurance and business services; community, social and personal services; other services; and commerce.

^b Transport and communications; electricity, water supply, etc.; public utilities; and miscellaneous: multi-sectoral enterprises or conglomerates.

^c Amount more than authorized values.

panies and mutual funds, with a similar percentage for pension funds. This means that 68.3% concerned non-financial public and private enterprises, and in 26 of the 46 operations, 50% or more of the equity was transferred (Errázuriz, 1987).

Of the ten biggest conversion operations under Chapter XIX up to September 1988, the five biggest concerned the forestry or forest industry sector (one transaction being associated also with the mining sector), three more concerned banks, one was in the mining sector, and one in the fishery sector (ECLAC/CTC, 1989). The regional implications of this are certainly clear and overwhelming, in view of the predominance of the primary sectors and industries associated with them. It is obvious that the main factor behind this geographical deconcentration of investments is the orientation towards external markets, since all seven non-banking operations belong to the export sector. Thus, natural resources are displacing the externalities and domestic markets typical of metropolitan areas as a factor in location.

As at March 1989, authorized investments

equal to or greater than US\$ 20 million (only 19 out of a total of 246) accounted for half of the authorized capital (table 3)

Analysis of the way the sectoral destination of conversions under Chapter XIX has evolved offers conclusions which are important both from the economic and the territorial point of view. Although the figures for different years and sources show differing levels of aggregation, especially in the "Others" category (table 4), it is possible to identify some clear tendencies which are confirmed with greater precision from 1988 onwards.

Thus, the primary sectors displayed a growing relative share up to August 1988, when they amounted to more than 43%, subsequently declining to around 36% at the end of 1989. Similar behaviour was observed in agriculture and forestry, with the evolution being somewhat more erratic in the fishery sector. In mining, in contrast, there is a sustained upward trend from minimum levels close to 1% in the early years to 11.2% at the end of 1989. It should be noted, however, that this figure is still rather low in view of the importance of this sector in the country,

contrasting with the higher figures registered for agricultural and forestry activities. An explanation for this fact is given below.

On the other hand, the growing and highly significant share of industry as a destination for debt conversion funds is worthy of note (table 4). From a level of around 16% in 1986-1987, this sector accounted for almost 38% of investments at the end of the 1980s, thus more than doubling its original share and —what is even more telling— standing out as the main sector attracting capital. In December 1989, the indus-

trial sector alone exceeded all the primary sectors together.

Finally, services —which initially attracted the bulk of investments, especially in the financial sector— showed an uneven downward trend, sinking from over 50% in 1986 to 28% in 1988 and around 20% in 1989. This behaviour certainly confirms the growing share, in both absolute and relative terms, of the primary and secondary goods-producing sectors, which together accounted for three-quarters of the cumulative investments at the end of the decade.

II

Territorial change

The foregoing indicates a marked tendency towards territorial deconcentration, with the regions and rural areas clearly predominating over the capital, which was previously the centre of attraction. This assertion is based not only on the share of the primary sectors, which are geographically oriented towards places where there are natural resources, but especially on the similar orientation shown by the industrial export

sector, which, in contrast with the old substitution pattern, now pays little or no heed to the attractions of big concentrations of population.

Indeed, the urban-regional pattern was practically reversed in the three-year period 1986-1989. Whereas in 1986 the metropolitan area attracted around three-quarters of the total investments, in the last year of this period it was the regions which accounted for at least two-

Table 5
CHILE: INVESTMENTS IN MANUFACTURING UNDER CHAPTER XIX

	% at 1 August 1988	% at 31 December 1989
Foodstuffs	5.76	7.30
Textiles, leather and footwear	3.37	2.00
Wood and furniture	3.24	2.26
Paper, printing and publishing	7.18	22.34
Chemicals, plastic and pharmaceutical products	1.40	2.69
Ceramics, glass and non-metallic minerals	0.32	0.13
Basic metal industries, metal products and machinery	1.22	0.64
Other manufactures	0.45	0.22
Manufacturing	22.95	37.86
Others	77.05	62.14
TOTAL	100.00	100.00
Manufacturing (millions of dollars)	281.4	1 162.0
Total (millions of dollars)	1 226.1	3 069.4

Source: First column: Central Bank of Chile (Montoya, 1988). Second column: Central Bank of Chile.

thirds of the total capital investment. In absolute terms, this means that over US\$ 2 billion has gone to the regions in only three years.

This raises the question of whether this debt conversion is not also a veritable geographical conversion.

Defining the above conclusions more accurately involves making a more disaggregated analysis of the manufacturing sector, which, as already noted, led the investment options under Chapter XIX.

Table 5 indicates that in 1988 nearly one-third of all manufacturing was concentrated in paper production. If we add to the figure of 7.18% corresponding to that sector the 3.24% corresponding to the lumber industry, it may be concluded that almost half of all manufacturing is connected with the forestry sector, which has clear regional implications in Chile. If, in addition, we assume that 50% of investments in the chemical industry and in foodstuffs are located in the regions, it may be concluded that, even if we assume that all the other branches were located in urban or metropolitan areas, over 60% of the manufacturing investments made under Chapter XIX are in the regions.

By the end of 1989, the manufacturing sector as a whole had sharply increased its relative share (almost 15 percentage points), especially in the industrial branches already mentioned (paper, foodstuffs and chemicals), although its share had gone down in the lumber industry. If we carry out the preceding calculation once again, it may be concluded this time that nearly 80% of the manufacturing financed under Chapter XIX was established outside the Metropolitan Region.

This figure is particularly significant, regardless of its possible upward or downward fluctuations according to the assumptions adopted. The resulting variations would in no case affect the general order of magnitude of this geographical deconcentration of industry: a sector traditionally identified with urbanization and metropolitanization.

But it is not only the primary sectors which have geographically relocated their resources: the industrial activities associated with them have also done so. Together, they upset and even reverse the tendencies towards territorial concentration.

Up to now, the analysis has been based on a

certain sectoral/territorial correspondence or identity: a necessary approach in view of the lack of information on the location of investments. For the same reason, although the conclusions are significant they are still too broad because they are limited to the regional/metropolitan dichotomy. This duality could conceal some important disparities between the regions, in view of their heterogeneous natural resource endowments and comparative advantages.

Table 6, which shows the regional distribution of investments under Chapter XIX as at 1 March 1990, permits more specific conclusions to be drawn regarding the above-mentioned process of geographical desconcentration. It also makes it possible to verify the hypothetical results put forward (originating from the territorial derivation of sectoral information available for previous years).

To begin with, table 6 reveals that 72.15% of the investments under Chapter XIX did not go to the Metropolitan Region, but to the rest of the country. The Metropolitan Region (plus the investments denominated H0 in the table) accounted for only 27.85%: a relatively low figure in view of the economic and demographic importance of this area, which contains 40% of the country's population and generates 40% of the national product.

This low rate of attraction of investments is even more surprising in view of the fact that the Metropolitan Region is particularly rich in natural resources and its export fruit-growing activities and mining sector are of national significance.

Outstanding among the other regions of the country is the Eighth Region (Bío-Bío), with nearly 17% of all the Chapter XIX investments in the whole country, equivalent to 60% of the total such investments in the Metropolitan Region. Although the Eighth Region is the second most heavily populated in the country and has a highly diversified economic base, its high rate of attraction of investments is explained fundamentally by the forestry sector and associated industries, in which this region occupies a leading place.

The most unusual case, however, is undoubtedly that of the Ninth Region (Araucanía): in spite of its lower economic dynamism in the national context, its high levels of extreme poverty, its limited economic diversity and its lower levels

Table 6
CHILE: DISTRIBUTION OF INVESTMENT UNDER CHAPTER XIX,
BY REGIONS, AS AT 1 MARCH 1990

Region	Investment (dollars)	% of total	N° of projects	% of total
I	38 694 592	1.23	1	0.30
II	201 729 272	6.40	4	1.20
III	14 318 138	0.45	3	0.90
IV	116 629 963	3.70	6	1.81
V	35 903 855	1.14	8	2.41
VI	36 949 729	1.17	15	4.52
VII	65 792 011	2.09	12	3.61
VIII	535 052 374	16.99	8	2.41
IX	452 786 633	14.38	7	2.11
X	88 721 960	2.82	18	5.42
XI	30 000 000	0.95	19	5.72
XII	9 346 886	0.30	18	5.42
HO ^a	34 153 569	1.08	23	6.93
H1 ^b	646 441 143	20.52	52	15.66
RM ^c	843 106 825	26.77	138	41.57
<i>Total</i>	<i>3 149 626 949</i>	<i>100.0</i>	<i>332</i>	<i>100.0</i>

Source: Prepared by the Central Bank of Chile at the author's request.

^a Corresponds to investments located directly or indirectly in enterprises which, while operating throughout the country, carry out most of their activities in the Metropolitan Region: e.g., banks, insurance companies, etc.

^b Corresponds to investments in enterprises which operate throughout the country but whose sales and income are mostly generated outside the Metropolitan Region: e.g., fruit exporters, diversified conglomerates such as COPEC, CAP, INDUS etc.

^c Metropolitan Region.

of modernization, this region accounts for over 14% of the Chapter XIX investments. Once again, this high percentage is explained by the forestry sector and associated industries. The Eighth and Ninth Regions have attracted the equivalent of the total investment for the forestry sector, plus that for the paper industry.

Together, the Eighth and Ninth Regions account for almost a third of the entire national investment under Chapter XIX and they surpass the Metropolitan Region itself in this respect.

In an intermediate position are the Second Region (Antofagasta) and the Fourth Region (Coquimbo), both areas in which mining activities predominate, which absorbed a total of over 10% of the Chapter XIX investments in the country.

The remaining eight regions attracted only about 10% of the national total. Leaving aside the contribution of the Seventh and Tenth Regions, which are relatively important in the forestry sector and also in the fisheries sector in the

case of the latter, the remaining six regions (I, III, V, VI, XI and XII) only attracted 5.24% of the total.

A noteworthy feature is the particularly low levels of attraction of investment of the Fifth and Sixth Regions (Valparaíso and O'Higgins) respectively. Both these regions are of major importance with regard to fruit growing and mining production for export, the first-named of these regions being also the site of the country's leading port and of one of the three biggest population centres in the country. Even so, the two regions together only account for 2.3% of total investment.

On the basis of an analysis by macro-regional aggregates taking account of economic affinity and geographical continuity, it may be concluded that the First to Fourth Regions account for 11.78% of the total resources invested under Chapter XIX: a figure in line with the sectoral total for mining, which is the main activity in this area. The Fifth, Metropolitan and Sixth Regions,

which together make up the capital macro-region, received 30.16%. The regions in the forestry area (the Seventh to the Tenth Regions) absorbed 36.28%, which is a value in line with the forestry sector and associated industries. Finally, the Eleventh and Twelfth Regions only attracted a total of 1.25%.

It should be borne in mind that these proportions do not take account of the important national quintile for which no regional orientation is specified (H1 in table 6). The information on the enterprises grouped together in the category gives grounds for assuming that it is highly

probable that the 20% that corresponds to them will primarily go to swell the percentages of, primarily, the forestry regions, and also the agricultural export regions, although the investments are usually of a much lower level in the latter case.

A dual general conclusion may be drawn from this: in the investments under Chapter XIX there is strong deconcentration towards the regions at the expense of the metropolitan pole, and marked heterogeneity among those regions. Both these phenomena are linked with the sectoral specialization of those investments.

III

Analysis of the investments made through debt conversion and under the regular legislation (Decree-Law 600)

The question arises as to whether the specialization described in the preceding section is exclusively a feature of the external investment which enters the country in this way, or whether it corresponds to the general behaviour of foreign capital in Chile. In other words: are there different sectoral preferences in foreign investments depending on the legislation under which those investments are made?

This question is very pertinent, because if capital investments under the debt conversion legislation (Chapter XIX) do not go to the same sectors as investments made under the general legislation (Decree-Law 600), then their territorial destination and effect will also be different.

This question is also pertinent because it is often objected that Chapter XIX attracts investments which may take the place of external investments that could have been made under Decree-Law 600, rather than adding to them. Although this point has been raised only in quantitative and global terms, it would be very interesting to know the answer to this by sectors, and this could be very useful for the possible adjustment of the relevant regulations.

As may be seen from table 7, external investment fell off sharply in the early 1980s as a result of the crisis. The year 1985, however, marked a turning point after which this trend was reversed and there was an increase in investment through

Table 7
CHILE: FOREIGN INVESTMENT ACTUALLY EFFECTED IN 1982-1989
(Millions of dollars of each year)

	1982	1983	1984	1985	1986	1987	1988	1989 ^a	Total
Decree-Law 600	384	183	160	138	184	497	787	667	3 000
Chapter XIX	-	-	-	32 ^b	214	707	886	952	2 791
<i>Total</i>	<i>384</i>	<i>183</i>	<i>160</i>	<i>170</i>	<i>398</i>	<i>1 204</i>	<i>1 673</i>	<i>1 619</i>	<i>5 791</i>

Source: Department of Studies, Sociedad de Fomento Fabril (Chamber of Industrial Development).

^a Figures up to 31 October (provisional).

^b Second half of year only (beginning in July).

Table 8
CHILE: SECTORAL DISTRIBUTION OF FOREIGN INVESTMENT
UNDER DECREE-LAW 600, 1982-1989

Sector	1982	1985	1989 ^a	Total 1982-1989
Services	50.8	23.9	14.4	30.0
Manufacturing	21.3	18.1	11.7	23.7
Mining	18.5	39.8	72.6	41.9
Agriculture	1.8	17.4	0.9	1.9
Forestry	—	—	—	0.1
Fisheries	3.9	0.7	0.0	1.1
Others ^b	3.7	—	0.4	1.3
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Millions of dollars	384	138	667	3 000

Source: Department of Studies, Sociedad de Fomento Fabril.

^a Up to 31 October. Provisional figures.

^b Construction and transport.

Table 9
CHILE: SECTORAL DISTRIBUTION OF CUMULATIVE FOREIGN
INVESTMENT EFFECTED BETWEEN 1985 AND 1989 UNDER
DECREE-LAW 600 AND CHAPTER XIX
(Millions of dollars)

Sector	D.L. 600 ^a	Chapter XIX ^b	Total	% of total
Services	660	619 ^c	1 279	23.9
Manufacturing	479	1 162	1 641	30.7
Mining	1 082	344	1 426	26.7
Agriculture	35	285	320	6.0
Forestry	—	343	343	6.4
Fisheries	5	128	133	2.5
Others ^d	12	188	200	3.7
<i>Total</i>	<i>2 273</i>	<i>3 069</i>	<i>5 342</i>	<i>100.0</i>

Source: Decree-Law 600: Department of Studies, Sociedad de Fomento Fabril; Chapter XIX: Central Bank of Chile.

^a Decree-Law 600: January 1985 to 31 October 1989.

^b Chapter XIX: July 1985 to 31 December 1989.

^c Financial sector, insurance and business services (US\$ 317.5 million); social, community and personal services (US\$ 90.8 million); commerce (US\$ 210.5 million).

^d Construction, electricity, water supply, etc.; transport and communications.

both these channels. Investment under Chapter XIX registers similar percentages between 1986 and 1989, fluctuating between 53.8% and 58.8% of the total of US\$ 5 064 million which entered the country between 1985 and 1989. Since this is a very considerable amount, it is important to stress its relative stability.

In the period 1982-1989, three sectors accounted for over 95% of the total investments under Decree-Law 600 (table 8). The most out-

standing of these was the mining sector, with over 40%, although its rate of actual materialization was relatively low. Second came the services sector, with a hefty 30%, and after this, industry, with nearly 24%. The remaining sectors barely exceeded 4%.

A surprising feature is the scanty 3.1% registered by agriculture, forestry and fisheries together, even though these are very dynamic sectors which occupy a leading place in exports.

If we compare the sectoral distribution for the various years, a notable feature is the sharp drop in the share of services, from over half in 1982 to less than 15% in 1989. This trend is similar to that registered by the same sector with regard to investment under Chapter XIX (table 4).

Industry, on the other hand—in contrast with what happened in the debt conversion process (where it more than doubled its share to reach the first place among all the sectors)—displayed a downward trend with regard to investments under Decree-Law 600, declining in 1989 to almost half of the percentage which it registered in 1982. This inverse performance would appear to indicate that, for this sector, investments under Chapter XIX have indeed taken the place of investments under the general legislation.

A similar conclusion may be reached with regard to agriculture, whose share increased strongly in 1985 (to over 17%), only to drop to less than 1% in 1989. Once again, the fisheries sector displays an atypical performance.

Just as significant as the total absence of the forestry sector in investments under Decree-Law 600 is the high and growing figure registered by the mining sector. Here, once again, it would appear that there has been a switch of investments between the two sets of regulations. Thus, it may be recalled that the forestry sector is very prominent in Chapter XIX investments, whereas mining attracted a smaller, although growing, proportion of investments under that investment law.

From the territorial point of view (on the basis of a similar calculation to that made in respect of Chapter XIX), Decree-Law 600 also shows a type of evolution which is increasingly in the direction of greater deconcentration. In 1982, less than 40% of direct investment was effected outside the metropolitan centre, but in 1985 the situation was reversed, since the regions attracted almost 70% of such investment, and by 1989 they absorbed over 80%. The mining sector played a decisive role in these figures.

Table 9 shows the sectoral behaviour of cumulative foreign investment between 1985 and 1989 and makes possible a comparative analysis (sectoral and territorial) between investments under Chapter XIX and those under Decree-Law

600, for the entire period during which these two mechanisms operated together.

It may be noted from table 9 that three sectors (industry, mining and services) accounted for more than 80% of foreign investment over the five-year period. The leading role played by the industrial sector among economic activities as a whole is worthy of note. These figures also confirm, in spite of the trends towards greater diversification, the importance of the mining sector, which occupies a prominent second place. Although the non-traditional export sectors (agriculture, forestry and fisheries) only accounted for less than 15% altogether, it should not be forgotten that much of the figure for industry is associated with them.

Between 60 and 66% of total foreign investment over these five years went to the regions, depending on whether 60% or 80% of industry is given this geographical orientation. It is clear that Chapter XIX alone is responsible for a greater regional trend in the distribution of investment than Decree-Law 600, particularly because of the greater relative weight of services in the latter.

Even so, between 1985 and 1989 an average of almost US\$ 700 million per year went outside the metropolis solely under the heading of external investment. This figure is of course much greater than the total investments of the National Regional Development Fund.

Table 10 provides important conclusions on the additionality between the various investment instruments.

Table 10
CHILE: SECTORAL SPECIALIZATION OF
INVESTMENT UNDER DECREE-LAW 600 AND
CHAPTER XIX, 1985-1989

Sectors	Decree-Law 600	Chapter XIX	Total
Services	51.6	48.4	100.0
Manufacturing	29.2	70.8	100.0
Mining	75.9	24.1	100.0
Agriculture	10.9	89.1	100.0
Forestry	—	100.0	100.0
Fisheries	3.8	96.2	100.0
Others	6.0	94.0	100.0
Total	42.5	57.5	100.0

Source: Table 9.

Mining is the only sector which clearly predominates in the investments under Decree-Law 600. In contrast, the investments under Chapter XIX cover 100% of the forestry investments and also account for very high percentages in fisheries, agriculture, industry and other sectors. In the services sector both mechanisms are more or less level, which is interesting in view of the special features of this sector.

The above sectoral specialization is an important item of background information both

for the trend projection of foreign investments and for the adjustment of the relevant legislation.

Various criticisms have been levelled at Chapter XIX in the national context. A recent amendment to this law incorporated the most important of these criticisms, but the very fact that Chapter XIX has been retained confirms its validity as a debt/equity conversion instrument. The amendments will not be without a certain impact in territorial terms, however.

IV

Conclusion

As a general conclusion, it may be stated that debt conversion has also resulted in veritable territorial conversion. Even under the hypothesis of zero fresh investment, the debt conversion involves a marked sectoral and regional reassignment of resources.

In spite of the big differences observed between the various regions of the country, the

overall process undoubtedly represents a significant departure from traditional trends. Ultimately, the causes of this change are, it is true, to be found in the general change which has taken place in the Chilean economy. Nevertheless, the debt (which greatly hastened this change) and its subsequent conversion contributed significantly to the adjustment which set off this regional revolution.

Bibliography

- Bulow, Jeremy and Kenneth Rogoff (1988), The buyback boondoggle: comments and discussion, William C. Brainard and George L. Perry (eds.), *Brookings Papers on Economic Activity*, No. 2, Washington, D.C., The Brookings Institution.
- CTC (United Nations Centre on Transnational Corporations) (1988), *Transnational Corporations in World Development: Trends and Prospects* (ST/CCT/89), New York. United Nations publication, Sales No.: E.88.II.A.7.
- Daher, A. (1989), "Ajuste económico y ajuste territorial en Chile", paper presented at the seminar on Consecuencias Regionales de la Reestructuración de los Mercados Mundiales (Regional consequences of the restructuring of world markets), Buenos Aires, Centre for Urban and Regional Studies, F. Ebert Foundation.
- "El Mercurio" (1990): Issue of 3 February, section B1. Santiago, Chile.
- Elortegui, C. (1988), "Endeudamiento interno y conversión de deuda en la economía chilena", Valparaíso, Chile, Ediciones Universitarias de Valparaíso.
- Errázuriz, E. (1987), "Capitalización de la deuda externa y desnacionalización de la economía chilena" (Capitalization of the external debt and denationalization of the Chilean economy), Documento de trabajo No. 57, Santiago, Chile, Academia de Humanismo Cristiano, Programme on the Economy of Labour (PET), August.
- Ffrench-Davis, R. (1989a), El conflicto entre la deuda y el crecimiento en Chile: tendencias y perspectivas, *Colección Estudios CIEPLAN*, No. 26, Santiago, Chile, Corporación de Investigaciones Económicas para Latinoamérica (CIEPLAN), June.
- _____ (1989b), Debt-equity swaps in Chile, *Cambridge Journal of Economics*, No. 1, vol. 14, London, Cambridge Political Economy Society Limited, Academic Press, March.
- Fontaine, J.A. (1988), Los mecanismos de conversión de deuda en Chile, *Estudios Públicos*, No. 30, Santiago, Chile, Centro de Estudios Públicos, second quarter.
- Garcés, F. (1987), Comentarios sobre conversiones de deuda en Chile, *Boletín Mensual*, No. 710, vol. 60, Santiago, Chile, Banco Central de Chile, April.
- GEMINES (Gestión de Empresas, Inversiones y Estudios) (1987), *Análisis de la coyuntura económica*, Informe Gémines, No. 84, Santiago, Chile, September.
- Hilton, A. (1987), "Debt-equity swaps. Costs, benefits and prospects", London, Financial Times Business Information.
- Joint ECLAC/CTC Unit on Transnational Corporations (1989), "Debt/equity conversion programmes: guidelines for debtors", Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), mimeo.
- Lahera, E. (1987), The conversion of foreign debt viewed from Latin America, *CEPAL Review*, No. 32 (L/C.G. 1473), Santiago, Chile, August.
- Latinfinance (1989), *Latinfinance*, No. 8. Euromoney Publications.
- Massad, C. (1986), Alleviation of the debt burden: historical experience and present need, *CEPAL Review*, No. 30 (L/C.G. 1441), Santiago, Chile, December.
- Montoya, I. (1988), "Disposiciones sobre conversión de deuda externa en Chile. Principales características y resultados", paper presented at the twenty-fifth annual meeting of Central Bank technicians of the Americas, Washington, D.C.
- Nair, G. and M. Frazier (1987), Debt-equity conversion and privatization, *Economic Impact*, No. 60, Washington, D.C., United States Information Agency.
- Reveco, J.M. (1988), Deuda externa y capitalización: análisis de la normativa de conversión, *Documento de Trabajo*, No. 15, V anexo, Santiago, Chile, Programa Regional de Investigaciones Económicas y Sociales del Cono Sur.
- Roberts, D. and E. Remolona (1987), Debt-swaps: a technique in developing country finance, *Finance for Developing Countries*, New York, Group of Thirty.
- Rubin, S. (1987), "Guide to debt-equity swaps", *The Economist*, Special Report No. 1104, London, The Economist Publications, September.
- Spieles, W. (1987), Indebtedness, debt-equity swaps and the heavily indebted countries, *Intereconomics*, vol. 22, No. 3, Hamburg, Federal Republic of Germany, Verlag Weltarchiv GmbH, May-June.

The State and poverty in Costa Rica

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The free market philosophy is having a strong influence on policy design and economic strategies in the Latin American countries, and this can lead to erosion of State action in favour of marginated groups as a result of mistakenly entrusting the task of redistribution to the "invisible hand" of the market.

The idea of economic efficiency does not include concern for distribution, however, so that it may be synonymous with extreme inequality and injustice, thereby calling for State action in this matter. In the progress towards more generalized use of the market, the function of the State in the reallocation of the product is vital, since the market is incapable of looking after the needs of marginated groups, for the simple reason that these groups do not have the necessary voice for taking part in the mercantile auction of benefits.

This article seeks to contribute to the store of knowledge on the role of the State with regard to transfers and attention to the interests of the poor in Costa Rica. An analysis is made of the direct effect of public subsidies — provided through the health, education, housing, food, social security, and water and sanitation programmes — on the incidence and intensity of poverty in Costa Rica. The results of the research show that the action of the Costa Rican State in this field has a significant impact. The effect of public social subsidies is to reduce total poverty from 26% to 10% and to narrow the global poverty gap by more than two-thirds. On the basis of this evidence, it may be maintained that the State provision of basic services to the population has not only made it possible to combat poverty in the country but is also a fundamental element in the social stability and exercise of democracy in Costa Rica.

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Introduction

The extent to which the free market philosophy is influencing economic policy design in the Latin American countries can lead to the erosion of State action in favour of marginated groups by mistakenly entrusting the task of redistribution to the "invisible hand" of the market rather than the visible hand of the State.

In this respect, a recent World Bank report not only maintains that poverty continues to be the greatest challenge to development policy but also argues that appropriate fiscal policies are essential for tackling poverty and that well-designed public spending can not only improve the access of the poor to services which are of basic importance for their existence but can also promote the development of human resources (World Bank, 1989, p. vi). Moreover, in its latest *World Development Report* the Bank reasserts this position and enlarges on it (World Bank, 1990, p. 3). This Report, which is devoted to the subject of poverty, indicates that in order to combat poverty successfully it must be attacked on two fronts which mutually strengthen each other: through initiatives which promote the productive use of the labour of the poor, and through the provision of this marginated section of the population with basic services, especially in the fields of education, health and nutrition. The Bank also maintains that a global approach to the problem of poverty calls for a well-designed programme for the transfer of income and for social security systems which complement the action taken on the two fronts mentioned above. Thus, far from condoning the abandonment of State efforts to satisfy the needs of marginated groups, it recognizes that this is a field where the public sector must play a dynamic role.

Furthermore, from the conceptual point of view, the inalienable responsibility of the State in the redistribution of the product is something which has been clearly established in the theory of public economics. A cornerstone in this respect is the classic work of Musgrave, who justified the redistributive function of the State by pointing out that unless the distribution pattern is accepted as being just (which is far from being the case in Latin America), the effective demand reflected in the market cannot be accepted as a guide for efficient resource use (Musgrave, 1968, p. 18). In the same respect, Prebisch pointed out that regardless of the economic efficiency of the

market, its deficiencies stem from the fact that demand is generated in a certain given income distribution, linked with a particular social structure which is highly inequitable and excludes a considerable part of the population from the benefits of development. It may be concluded from the foregoing that although the market laws may lead to rational solutions, the benefits of those solutions are restricted to a small privileged group and can hardly claim to be rational for the community at large (Prebisch, 1981, p. 16).

In short, while it is absurd to deny the virtues of the market as regards efficiency in resource assignment, the notion of economic efficiency is amoral and rules out considerations of distribution, so that it can easily be synonymous with extreme inequality and social injustice. Consequently, within the trend towards more generalized use of the market, the State has a vital role to play in the reassignment of the product, since the market is incapable of looking after the needs of the marginated groups, for the simple reason that these groups do not possess the necessary voice for participating in the mercantile auction of benefits.

In the light of this controversy, this article seeks to contribute to the store of knowledge on the role of the State in the transfer of resources and attention to the needs of the poor in Costa Rica. On the basis of the methodological framework used in studies on this topic carried out in developing countries (Selowsky, 1979; Meerman, 1979), the article analyses the effects of the public subsidies granted through social programmes on the incidence and intensity of poverty in Costa Rica.

The topics dealt with in the article have been divided into four sections. Section I sets forth the methodological basis for the study, while section II examines the magnitude and intensity of poverty in the absence of the benefits of the social programmes. Section III analyses the magnitude and composition of the public subsidy given to social programmes and its distribution between the poor and the non-poor, while section IV gives estimates of the magnitude of poverty after taking into account the effects of the subsidy. Finally, the last section summarizes the conclusions of the study.

I

The methodological framework

1. *The concept of income and poverty lines*

In this article, a profile of absolute poverty in 1983 is established, using as a reference the income received by families. For this purpose — using the information compiled in a sample survey carried out in 1984 by the Economic Research Institute of the University of Costa Rica— two categories of income were defined: a) income excluding the benefits derived from public expenditure and b) income including those benefits.

The first category comprises monthly wages, profits (balance of personal activities), capital income (interest, dividends, and property rents, including the estimated income corresponding to the fact of living in one's own house), value of income corresponding to production used for

home consumption, contributory pensions,¹ sickness benefits (benefits paid during temporary absence from work on account of sickness), sporadic transfers (lottery prizes, presents, payments under insurance policies, inheritances), and income from other sources (financial help from relatives, for example). Through this definition, it is sought to cover all income produced by the collective effort of family members, excluding all aid provided by the State.

¹This is a regular pension scheme in which workers make systematic contributions in order to receive a pension when they retire. Older persons who are not covered by this scheme can apply for a pension under the non-contributory system, which is financed by the State. Because of this latter fact, the pensions under this system are included as part of State assistance programmes.

The second category of income includes the value of benefits derived from public spending in the social areas. Obviously, the income received under this second category gives a total income greater than (or at least equal to) that received under the first category.

Although the income per adult-equivalent is probably the most efficient reference indicator for measuring poverty (Trejos, 1983, pp. 61-62), the limitations of this variable, to which Mohan so rightly drew attention, make it desirable to adopt instead the per capita family income (Mohan, 1984, p. 5). Thus, by matching this per capita average with a poverty line likewise expressed in per capita terms, the families were classified into poor and non-poor.

In order to establish the absolute poverty line, the study by Mata and Murillo on the basic food shopping basket in Costa Rica was used, in which this basket is defined as "the amount of food consumed by an adult Costa Rican male (over 25, weighing 65 kgs and engaged in an average level of activity), which amounts to 2 900 calories per day" (Mata and Murillo, 1980).

The cost of the basic basket was calculated using the food prices determined by the Department of Statistics and Censuses of Costa Rica for the establishment of the consumer price index. This led to the estimation of two poverty lines: the first of these is the "extreme poverty line", defined as the per capita value of the basic family basket; the second estimated line is the "basic poverty line", which is somewhat higher than the first line because it takes account also of some non-food items.

In accordance with these two definitions, families were classified as a) *extremely poor*, if their per capita income is less than the monthly per capita cost of the basic family basket (families below the extreme poverty line (EPL)); b) *basically poor*, if their per capita income is equal to or greater than the EPL but less than the per capita cost of the "basic needs basket" (families below the basic poverty line (BPL)); and c) *non-poor*, if their income is equal to or greater than the BPL.

Absolute poverty lines were estimated for the urban and rural areas of Costa Rica. For the urban areas, the estimates gave a basic poverty line of 1 518 colones and an extreme poverty line of 964 colones, while for the rural areas the respective values were 1 260 and 800 colones.

Finally, various indexes have been designed for measuring the intensity of poverty.² The index adopted in this article is that of the poverty gap, defined as the difference between the income of the family unit in question and the income needed to bring that unit up to a given poverty line (Beckerman, 1985, p. 7). An advantage of estimates based on the poverty gap is that they take account both of the number of poor families and the intensity of their poverty.

2. *The redistributive effects of public spending*

In this article, the notion of subsidy defined by Selowsky is used. According to this author, the provision of a good or service involves a subsidy whenever the cost of the product is greater than the direct expenditure made by the population receiving it (Selowsky, 1979, pp. 10-12). Use is also made here of the results and methodological procedures of a study on social public spending in Costa Rica carried out by the author in the Economic Research Institute of the University of Costa Rica together with other colleagues.³

The public sector can generate subsidies in three ways: a) through public spending, b) through public enterprises and c) through price controls. Most of the cases analysed in this study correspond to services subsidized through public spending. This kind of subsidy is provided through the Government budget, and its redistributive effect can be analysed in the light of three alternative approaches (ECLAC, 1981, p. 2). The first of these is based on the evaluation of the income generated by the factors of production of the goods and services provided by the Government. The second approach analyses the effect of public sector activity on the structure of production and resource allocation and, subsequently, the impact of the changes thus produced on the income received by the factors of

² For an account of various alternative forms of measurement, see Kakwani, 1980, chapter 15.

³ This study was part of a research project on the redistributive effect of social public spending in five Latin American countries, carried out with financing from IDB and co-ordinated by the Programme of Joint Studies on Latin American Economic Integration (ECLAC). The Economic Research Institute has produced several working documents on the subject.

production. The third approach is centered on the direct benefits provided to those receiving public goods and services. Thus, in order to evaluate the redistributive effect of the benefits, their value in terms of income must be quantified.

With regard to this latter approach, one way of estimating the benefits is by using the valuation of them given by the family unit itself. This "benefits received" method involves difficult problems of measurement, however, so that the method suggested by the "cost incurred in favour of" approach is often used (Gillespie, 1980, p. 68).

This article deals with the direct redistributive effects of public spending, so that the direct benefit approach is used and it is quantified via the budget, that is to say, using the "cost incurred in favour of" approach. Within this approach, public spending was divided into the categories of consumption, capital expenditure and transfers. The treatment given to these categories for distributive purposes is in line with conventional theory and practice in the area of public finances.⁴

3. Selection of public programmes and estimation of the subsidy

The public programmes analysed here are those in the fields of education, health, social security, nutrition, housing and water supply and sanitation.

The education programmes cover preparatory, primary, secondary and higher education. Adult education, special education (for the mentally or physically hindered), technical training and post-secondary education are also taken into account. With regard to the subsidy corresponding to these programmes, it is considered that since in the case of education the beneficiaries are not obliged to make any direct payment in order to gain access to this service, the amount of the subsidy is equal to the spending of the State on the education of its citizens.

This subsidy was quantified on the basis of the budgets of the various national institutions connected with education, supplemented with es-

timates of capital expenditure (which covers the depreciation of assets), and of the profits that could be earned on such an investment under the best possible circumstances.

In order to estimate the subsidy on health, the programme was divided into two classes: a) curative medicine and b) preventive medicine. Curative medicine, in turn, comprises hospitalization and outpatient services, while preventive medicine includes direct prevention and preventive medicine in general.

The method of estimation used in this case is basically the same as for education. Here, too, there is no direct payment for the service, so that the subsidy is equal to the total spending by the State on these programmes.

The data for estimating the subsidy were obtained from the budget of the Costa Rican Social Security Fund and the final clearance of the budget of the Ministry of Health. Once again, the subsidy deriving from the use of assets was calculated by estimating the opportunity cost of the investment.

With regard to the social security programmes, for analytical purposes these were divided into three groups: a) pension systems, including both contributory schemes and those which do not operate on this basis, b) cash benefits, unemployment payments, and other similar transfers, and c) social welfare, including both infant welfare programmes and programmes for handicapped persons and the aged. In estimating the subsidy in these three fields, only the amount of transfers was taken into account. The capital items were not taken into account since they formed only an insignificant percentage of the overall subsidy.

In estimating the subsidy in the case of nutritional programmes, three types of "end product" were defined: a) meals services (mainly for schools), b) food aid, and c) other programmes.

Estimation of the current expenditure on nutritional programmes was based on the final clearance of the budget of the agencies executing these programmes. In order to evaluate the capital cost, a physical inventory of the assets of educational centres and other institutions participating in nutritional programmes was used.

In order to estimate the housing subsidy, a different method from that used in the above cases was adopted. In this case, the subsidies were

⁴ For a more detailed discussion of these aspects, see Taylor, 1986, chapter I.

classified into two categories: a) direct subsidies, and b) subsidies implicit in the financial terms. Direct subsidies are those granted through the provision of free services, free housing or transfers of funds for housing purposes. These kinds of programmes are carried out by the Joint Social Aid Institute (IMAS) and the National Housing and Urban Development Institute.

Implicit subsidies consist of the granting of favourable financial terms on housing loans. The importance of this type of subsidy lies in the fact that the banking system of Costa Rica is nationalized, so that the economic influence of the public sector through the financial system is of vital importance.⁵

With regard to the method of estimation, the direct subsidy is equal to the cost incurred by the State in the provision of dwellings and the granting of transfers for this purpose, while the implicit subsidy is the result of multiplying the difference between the nominal interest rate charged to debtors and the effective cost of the funds by the total amount of the housing portfolio of the creditors.

The last group of programmes in question is that connected with water supply and sanitation.

Here, the method of estimating the subsidy followed the same principles as those described above. Thus, the figures for current and capital expenditure were estimated on the basis of information from the National Institute of Water Supply and Sanitation and the records of various municipalities responsible for providing these services to their communities.

Since, in the case of water supply and sanitation, the beneficiaries make direct payment for this service (in contrast with the other cases analysed here), the subsidy was estimated by deducting the amount of such payments from the current and capital expenditure.

4. *Distribution of the subsidy*

The total subsidy received by a household when consuming a good or service is equivalent to the unit subsidy multiplied by the number of units consumed. Consequently, where appropriate, the unit of consumption was specified, together with the corresponding average subsidy for each programme.

Where a unit of consumption was specified, the allocation of the subsidy was calculated by multiplying the number of units consumed by each family by their respective unit cost. This was done in the case of education, health, pensions, some nutritional programmes, and water supply and sanitation. In other cases, *ad hoc* procedures were used, based on the particular characteristics of the programmes (Taylor, 1986, chapter II).

⁵This study concentrates on the housing portfolio of the national banking system. It also takes account of other public institutions which provide housing loans, however, including the People's Bank for Community Development, the Costa Rican Social Security Fund (cc.ss) and the National Insurance Institute.

II

The magnitude and characteristics of poverty before the benefits of social programmes

1. *The extent of absolute poverty*

The proportion of Costa Rican families classified as poor in 1983 came to 26% (table 1). Generally speaking, the incidence of poverty is greater in rural areas, where 34% of the families are under the absolute poverty line, compared with 19% in urban areas.

Basic poverty is the form of poverty which is slightly more prevalent. Thus, 53% of the poor families have incomes above the extreme poverty line (the line corresponding to the cost of the basic food basket), but their income is not enough for them to fully satisfy their non-food needs. The incidence of basic poverty for the country as a whole is 14%, while the incidence of extreme poverty is estimated at 12%.

To put this in another way, 14% of the families in the country (or 53% of the poor families) are not capable of fully satisfying their basic needs with the income they receive, although they do at least have sufficient resources to satisfy their nutritional needs. On the other hand, 12% of the total number of families (or 47% of the

poor families) do not even have enough resources to purchase the basic food basket.

When the urban and rural areas are examined separately, basic poverty still shows a greater incidence than extreme poverty. Nevertheless, the incidence of both forms of poverty is systematically greater in rural areas than in the cities, which is confirmed by the distribution pattern of poor families: 60% of them are in rural areas and only 40% in the cities.

If we compare their income levels, poor families have a total average income of 4 850 colones per month (approximately US\$ 105), compared with 17 027 colones (approximately US\$ 370) for non-poor families (table 2). In other words, the income of non-poor families is on average over three times that of poor families. This disparity is somewhat greater in the cities (four to one) than in rural areas (less than three to one).

Generally speaking, incomes are higher in urban areas than in rural areas, except in the case of the total income of families in a situation of extreme poverty.

In terms of types of poverty, families in a

Table 1
ESTIMATES OF ABSOLUTE POVERTY^a
BY LEVEL OF POVERTY AND REGION
(Percentages)

Indicator	Whole country		Urban		Rural	
Proportion of poor families	25.7	(100.0%)	19.0	(100.0%)	33.5	(100.0%)
Basic poverty	13.7	53.3	10.6	55.8	17.5	52.2
Extreme poverty	12.0	46.7	8.4	44.2	16.0	47.8
Regional distribution of families						
All families	100.0		54.5		45.5	
All poor	100.0		40.2		59.8	
Basic poverty	100.0		42.1		57.9	
Extreme poverty	100.0		38.0		62.0	
Non-poor	100.0		59.5		40.5	

^a Before granting of subsidies through social programmes.

Table 2
COSTA RICA: TOTAL AND PER CAPITA MONTHLY FAMILY INCOME^a
BY LEVEL OF POVERTY AND REGION
(Colones)

Income group	Whole country	Urban	Rural
Total monthly family income	14 029	17 623	9 724
All poor	4 850	5 165	4 639
Basic poverty	6 258	6 894	5 796
Extreme poverty	3 239	2 970	3 404
Non-poor	17 027	20 538	12 322
Per capita monthly family income	3 743	4 871	3 393
All poor	875	962	817
Basic poverty	1 147	1 272	1 056
Extreme poverty	565	569	562
Non-poor	4 736	5 785	3 198

^a Before granting of subsidies through social programmes.

situation of basic poverty have an average monthly income of 6 258 colones (approximately US\$ 135), whereas those in a situation of extreme poverty only receive an average of 3 239 colones (approximately US\$ 70) per month.

The big disparities existing in urban areas are reflected in the fact that the income of families in a situation of extreme poverty is only 2 970 colones (US\$ 64 per month), that is to say, less than 15% of the income of non-poor urban families.

Since poor families tend to be bigger than non-poor families, the differences in income between the poor and non-poor increase still further when per capita family income levels are compared. Thus, the average per capita income of poor families comes to 875 colones per month (approximately US\$ 19), whereas that of non-poor families amounts to \$ 4736 colones (US\$ 103).

The inequality is also accentuated at both the urban and rural levels. The per capita income of non-poor urban families is six times that of poor families, while the per capita income of non-poor rural families is almost four times that of their poor counterparts.

In terms of poverty gaps, the difference in total monthly family income amounts to 3 332 colones (US\$ 72) (table 3). In urban areas the difference is greater than this average (3 944

colones), while in rural areas it comes to 2 921 colones. The same relationship is observed in the per capita estimates.

Hypothetically, in order to completely eliminate the poverty gap through income redistribution, non-poor families would have to transfer 7% of their income to poor families. If only the cities were taken into account, the necessary transfer would be 5%, while in the case of rural areas it would come to 12%.

The results reflected by the poverty gap bear out the observations based on the survey of families in a situation of extreme poverty. Not only is the incidence of poverty greater in rural areas, but also its intensity, as measured through the income deficit.

If we look at the gaps separately, according to the different types of poverty, we see how serious the situation of the extremely poor families is. For the country as a whole, the gap in the case of extremely poor families equals 4 908 colones, in contrast with the gap of 1 954 colones corresponding to families in a situation of basic poverty. In order to eliminate the gap in the case of the extremely poor families, a transfer from the non-poor equal to 5% of their income would be required, while in order to achieve the same goal with regard to the basic poverty gap the necessary transfer would be only 3%.

At this point, it is worth noting an important

Table 3
COSTA RICA: POVERTY GAPS^a BY TYPE OF GAP AND REGION
(Current colones and percentages)

Type of gap	Whole country	Urban	Rural
Global monthly poverty gap			
Family average	3 332.0	3 944.0	2 921.0
Per capita average	498.0	556.0	443.0
Global (millions of colones) ^b	439.2	208.9	230.3
Global, as % of income of non-poor	6.7	4.5	12.1
Monthly basic poverty gap			
Family average	1 954.0	2 214.0	1 764.0
Per capita average	220.0	247.0	204.0
Global (millions of colones) ^b	137.4	65.6	71.8
Global, as % of income of non-poor	2.1	1.4	3.8
Monthly extreme poverty gap^c			
Family average	4 908.0	6 138.0	4 156.0
Per capita average	800.0	949.0	698.0
Global (millions of colones) ^b	301.8	143.3	158.5
Global, as % of income of non-poor	4.6	3.1	8.3

^a Before granting of subsidies through social programmes.

^b Family average, multiplied by number of families in a poverty situation, by level.

^c Estimated with respect to the basic poverty (line separating the poor from the non-poor).

aspect relating to poverty levels. It will be recalled that the family survey showed that most of the poor are in a situation of basic poverty. According to the poverty gap, however, the intensity of the poverty suffered by the extremely poor is more than double that experienced by persons in a situation of basic poverty. For social policy purposes, this information is of great impor-

tance. As will be gathered from the figures on the global poverty gap, reducing (or eliminating) extreme poverty is extremely costly in economic terms, but at the same time it is clear that the degree of poverty suffered by the extremely poor is so intense that neglecting this area could endanger the stability of the country.

III

Magnitude, composition and distribution of the public subsidy for social programmes

1. *The magnitude and composition of the public subsidy*

The overall subsidy in 1983 was calculated at 19 512 million colones: equivalent to 16% of the gross domestic product of the country in that year. More than two-thirds of this global figure corresponds to the subsidies for education (39%)

and health care (38%); two priority areas in Costa Rican social policy. In order of importance, these are followed by the subsidies for water supply and sanitation and for housing, while 5% corresponds to food and nutrition and only 2% to subsidies for social security programmes (table 4).

If we look at the regional distribution of the

Table 4
COSTA RICA: PUBLIC SUBSIDY AND ITS COMPOSITION BY PROGRAMMES AND REGIONS, 1983
(Millions of colones y percentages)

Type of programme	Millions of colones			Composition by programme			Composition by regions		
	Whole country	Urban	Rural	Whole country	Urban	Rural	Whole country	Urban	Rural
<i>Total</i>	19 512	11 493	8 019	100.0	100.0	100.0	100.0	58.9	41.1
Education	7 565	4 916	2 649	38.8	42.8	33.0	100.0	65.0	35.0
Health	7 386	3 421	3 965	37.9	29.8	49.5	100.0	46.3	53.7
Food and nutrition	1 039	384	655	5.3	3.3	8.2	100.0	37.0	63.0
Social security	463	243	220	2.4	2.1	2.7	100.0	52.5	47.5
Housing	1 262	1 133	129	6.4	9.9	1.6	100.0	89.8	10.2
Water supply and sanitation	1 797	1 396	401	9.2	12.1	5.0	100.0	77.7	22.1

Source: Economic Research Institute of the University of Costa Rica.

overall subsidy, we see that three-fifths goes to the cities and the rest to rural areas. Health and food and nutrition programmes, in particular, mainly benefit the rural areas. In contrast, housing and water supply and sanitation programmes are basically urban. In the case of education, two-thirds of the subsidy goes to urban areas, due mainly to the high proportion of resources assigned to higher education in those areas.

With regard to the composition of public subsidies at the programme level (table 5), in the area of education almost 60% of the subsidy corresponds to primary and secondary education, while one-third is absorbed by higher education. Rural families are substantial beneficiaries of the subsidy for primary education (58%), but the subsidy for secondary and higher education mainly benefits urban families. It should be borne in mind in this respect that a high proportion of the secondary educational institutions and all the universities are located in cities. Secondary technical schools are an exception to this, however, since many of these (agricultural training colleges) are located in rural areas.

In the case of the subsidy for health programmes, 90% goes towards paying the cost of curative medicine, especially hospitalization. Over half this subsidy goes to rural families, so

that when it is considered that only 46% of the nation's families live in rural areas, the subsidy per family received by them tends to be greater than that of urban families.

The subsidy for food and nutrition programmes is provided mainly in the form of a meals services (72%), mainly for primary schools. It may be noted that nearly two-thirds of the resources spent in this field go to rural areas.

As already noted, the subsidy for social security programmes is the smallest of all. It goes mainly to the non-contributory pension scheme (60%) and the social security programmes (37%). The distribution of expenditure in the social security field slightly favours urban families, but most of the pensions under the non-contributory scheme are received by rural families. This tends to offset the smaller coverage of the contributory systems in rural areas than in the cities.

The subsidy for housing is predominantly financial and urban: 96% goes to finance the lower interest rates charged by the national banking system and other public institutions on housing loans, and 90% of this subsidy benefits urban families. This financial subsidy policy is possible, of course, because of the existence of a nationalized banking system. It is no surprise that this subsidy is concentrated in urban areas, since the

Table 5
COSTA RICA: ANNUAL PUBLIC SUBSIDY, BY PROGRAMMES AND REGIONS
(Millions of colones and percentages)

Type of programme	Whole country	%	Urban	%	Rural	%
<i>Total</i>	19 512	100.0	11 493	100.0	8 019	100.0
Education	7 565	100.0	4 916	100.0	2 649	100.0
Preschool	333	4.4	221	4.5	114	4.3
Primary and special	2 580	34.1	1 077	21.9	1 491	56.3
Secondary	1 853	24.5	1 209	24.6	644	24.3
Academic	1 263	16.7	949	19.3	315	11.9
Technical	590	7.8	260	5.3	329	12.4
Higher	2 534	33.5	2 301	46.8	244	9.2
Vocational	265	3.5	108	2.2	156	5.9
Health	7 387	100.0	3 421	100.0	3 965	100.0
Curative	6 588	89.2	3 072	89.8	3 517	88.7
Out-patient	2 231	30.2	1 067	31.2	1 166	29.4
Hospitalization	4 357	59.0	2 005	58.6	2 351	59.3
Preventive	798	10.8	349	10.2	448	11.3
Direct	606	8.2	281	8.2	325	8.2
General	192	2.6	68	2.0	123	3.1
Food and nutrition	1 039	100.0	243	100.0	220	100.0
Meals services	747	71.9	266	69.4	482	73.6
Food allocation	231	22.2	88	22.3	143	21.8
Other	61	5.9	30	7.8	30	4.6
Social security						
Contributory pensions	277	59.9				
Social security (children and old people)	172	37.2	128	52.7	44	20.0
Direct assistance	14	2.9	9	3.7	5	2.3
Housing	1 262	100.0	1 396	100.0	401	100.0
Implicit (financial) subsidy	1 215	96.3	1 099	97.0	117	90.7
Direct subsidy	47	3.7	34	3.0	12	9.3
Water supply and sanitation	1 797	100.0	1 396	100.0	401	100.0
Water supply	1 619	90.1	1 199	85.9	401	100.0
Sanitation	178	9.9	197	14.1	—	—

Source: Economic Research Institute of the University of Costa Rica.

needs imposed by the urbanization process and the bigger payment capacity of urban families tend to oblige the financial institutions to assign more resources to the cities.

2. Distribution of the subsidy by levels of poverty

One-third of the public subsidies for social programmes benefit poor families (table 6). Since poor families form 26% of the whole, the average subsidy received is higher than that of the non-poor. Thus, the subsidy raises the income of poor families by 4 187 colones per month, compared

with the 3 625 colones granted to the non-poor. The global average monthly subsidy is estimated at 3 633 colones, and is equal to over a quarter of the average family income in the country.

Among poor families, the subsidy is distributed very uniformly: 53% for families in a situation of basic poverty and 47% for those living in conditions of extreme poverty. These shares are equivalent to the overall proportions of basic and extreme poverty, so that the average subsidy per family in the two strata is practically the same.

Over a quarter of the subsidy for education

Table 6
COSTA RICA: ALLOCATION OF ANNUAL PUBLIC SUBSIDY BETWEEN POOR AND
NON-POOR, BY PROGRAMMES
(Colones and percentages)

Programme and income group	Total subsidy (millions)	%	Average subsidy per beneficiary family
All programmes	13 512	100.0	43 596
All poor	6 253	32.0	—
Basic poverty	3 293	16.9	50 220
Extreme poverty	2 960	15.1	50 940
Non-poor	13 259	68.0	41 924
Education	7 565	100.0	26 832
All poor	2 100	27.8	—
Basic poverty	1 213	16.0	26 664
Extreme poverty	887	11.8	22 212
Non-poor	5 465	72.2	27 816
Health	7 386	100.0	16 404
All poor	2 764	37.4	—
Basic poverty	1 352	18.3	29 868
Extreme poverty	1 412	19.1	24 216
Non-poor	4 622	62.6	14 124
Food and nutrition	1 039	100.0	4 356
All poor	584	56.2	—
Basic poverty	266	25.6	6 756
Extreme poverty	318	30.6	4 956
Non-poor	455	43.8	3 288
Social security	463	100.0	...
All poor	305	65.9	...
Basic poverty	115	24.8	...
Extreme poverty	190	41.1	...
Non-poor	158	34.1	...
Housing	1 262	100.0	32 956
All poor	144	11.4	28 416
Basic poverty	144	11.4	28 416
Extreme poverty	—	—	—
Non-poor	1 118	88.6	32 832
Water supply and sanitation	1 797	100.0	5 256
All poor	356	19.8	—
Basic poverty	203	11.3	4 236
Extreme poverty	153	8.5	4 560
Non-poor	1 441	80.2	5 544

Source: Economic Research Institute of the University of Costa Rica.

is received by the poor, with those who are in a situation of basic poverty being somewhat more favoured. By levels of education, it has been estimated that 42% of those benefited in higher education come from the richest two deciles of families, whereas the opposite is observed in primary education. In secondary education the beneficiaries come mainly from the middle class groups (Trejos and Elizalde, 1985, p. 38).

The percentage of health expenditure assigned to the poor (37%) exceeds the estimated

proportion of poor families, so that the health subsidy per poor family benefited averages some 50% more than that of the non-poor.

The subsidies on food and nutrition and social security are mainly oriented towards low-income families. Approximately two-thirds of the expenditure on these items goes to poor families, where it acts as an income support programme. It should be borne in mind, however, that these programmes make up the smallest subsidy categories analysed here.

The subsidies for housing, water supply and sanitation are at the other extreme. These programmes were designed basically for the non-poor, and poor families obtain only 11% of the housing subsidy and 20% of the subsidy on water supply and sanitation. Still worse, those who are in a situation of extreme poverty receive abso-

lutely none of the first subsidy and only 9% of the second.

Of all the social programmes examined here, that for housing involves the biggest subsidy per beneficiary family, so the relatively small scale of this programme reflects the small number of beneficiaries.

IV

The magnitude and characteristics of poverty after the benefits of social programmes

1. The public subsidy and income

In order to evaluate correctly the effect of the subsidy on income, the same control group must be used both before and after the benefit. In other words, it is necessary to determine the new levels of income (after incorporation of the subsidy) of the same groups defined in the situation before receipt of the benefit, so as to ensure that the income comparisons are made on compatible bases.

The estimates thus obtained are given in tables 7 and 8. For the country as a whole, the subsidy increases total monthly family income by more than a quarter (3 633 colones). In both ab-

solute and relative terms, the poor are by far the most favoured group: their total average family income increases by 4 187 colones, compared with the increase of 3 625 colones in the income of the non-poor. These resources represent 86% of the family income originally obtained by the poor and 18% of that of the non-poor. As might be expected, the biggest relative effect is in the case of the extremely poor, whose income is more than doubled.

In per capita terms, the relative effect of the subsidy is generally very similar to the effect on total income, but in the case of the poor it is more marked. Thus, whereas the overall per capita average increases by approximately a quarter

Table 7
COSTA RICA: MONTHLY INCOME OF URBAN POOR BEFORE BENEFITS
AND OF NON-POOR BEFORE AND AFTER THE PUBLIC SUBSIDY
(Colones and percentages)

Income group	Average without subsidy	Income with subsidy	Absolute difference	Percentages
Total monthly family income	17 623	21 789	4 166	23.6
All poor	5 165	9 516	4 351	84.2
Basic poverty	6 894	11 299	4 405	63.9
Extreme poverty	2 970	7 253	4 283	144.2
Non-poor	20 538	24 661	4 123	20.1
Monthly per capita family income	4 871	5 092	1 031	21.2
All poor	962	1 865	903	93.9
Basic poverty	1 272	2 118	846	66.5
Extreme poverty	569	1 544	975	171.4
Non-poor	5 785	6 847	1 062	18.4

Table 8
COSTA RICA: MONTHLY INCOME OF RURAL POOR BEFORE BENEFIT
AND OF NON-POOR WITH AND WITHOUT PUBLIC SUBSIDY
(Colones and percentages)

Income group	Average without subsidy	Income with subsidy	Absolute difference	Percentages
Total monthly family income	9 724	12 717	2 993	30.8
All poor	4 639	8 715	4 076	87.9
Basic poverty	5 796	9 899	4 103	70.8
Extreme poverty	3 404	7 451	4 047	118.9
Non-poor	12 322	14 761	2 439	19.8
Monthly per capita family income	2 393	3 049	656	27.4
All poor	817	1 630	813	99.5
Basic poverty	1 056	1 919	863	81.7
Extreme poverty	562	1 322	760	135.2
Non-poor	3 198	3 774	576	18.0

and that of the non-poor by 18%, the per capita income of the poor increases by a factor of more than one and a half. On the other hand, in absolute terms the per capita family subsidy for the poor is less than the average. This is due to the larger size of poor families compared with non-poor. At the regional level, the supplementary income received by urban families (4 166 colones) is much greater than that received by rural families (2 993 colones). The same contrast is observed when this income is measured in per capita terms. It is important to note that whereas this disparity in the additional income provided to rural and urban families is smaller among the poor, the non-poor display very large inequalities. It may be concluded from this that in the overall assignment of expenditure to social programmes, no appreciable regional distinction is made in the case of poor families, but such a distinction does exist in the case of the non-poor.

2. Poverty estimates

The effects of the subsidy policy described above on poverty are considerable (table 9A). After including the subsidy, all the families were reclassified according to the previously defined parameters of absolute poverty, and when the subsidy is considered as a whole, the proportion of poor families in the country goes down from 26% to only 10%.

The biggest reduction is in extreme poverty, the level of which goes down to 3%. As a result, the composition of global poverty also changes. Basic poverty, which accounted for 53% of the poor families, now rises to 70%, with the remainder corresponding to extreme poverty.

Regionally, the incidence of poverty goes down more in rural areas, where it is now estimated that only 12% of the families are poor. Once again, the relative magnitude of basic poverty is now higher than the national average in these areas.

In the cities, 8% of the families are now under the poverty line, compared with 19% if the subsidy is excluded. Almost two-thirds of these families are in a situation of basic poverty.

With regard to the regional distribution of the families, the proportion of urban poor increases slightly when the subsidy is included. This is due to the higher percentage of poor who live in conditions of extreme poverty in the cities. Thus, under the new circumstances, half the families suffering from extreme poverty live in cities, compared with the proportion of one-third registered before.

The appreciable reduction in *extreme poverty* (table 9A) must be interpreted with caution. It will be recalled that the poverty line is equal to the cost of the basic shopping basket, which means that families below this line do not have sufficient income to satisfy their nutritional

Table 9 A
COSTA RICA: ESTIMATES OF ABSOLUTE POVERTY BEFORE AND AFTER PUBLIC SUBSIDY,
BY LEVEL OF POVERTY AND REGION
(Percentages)

	Whole country		Urban		Rural	
	Before	After	Before	After	Before	After
Proportion of poor families	25.7	9.8	19.0	7.7	33.4	12.3
Basic poverty	13.7	6.9	10.6	5.0	17.5	9.0
Extreme poverty	12.0	2.9	8.4	2.7	16.0	3.3
Regional distribution of families						
All families	100.0	100.0	54.4	54.5	45.5	45.5
All poor	100.0	100.0	40.2	42.9	59.8	57.1
Basic poverty	100.0	100.0	42.1	40.2	57.9	59.8
Extreme poverty	100.0	100.0	38.0	49.3	62.0	50.7
Non-poor	100.0	100.0	59.5	55.8	40.5	44.2

needs. What they need, therefore, is more food or more money to buy it. Most of the social programmes analysed here, however, provide income in kind: education, health, water supply or housing, for example. Only two types of programmes—social security and food and nutrition—provide money or food for the families, and yet these are the smallest programmes. Moreover, if we look at these categories in detail, only the meals service, food allocations and non-contributory pensions are items that directly serve the purpose of immediately improving the food consumption of families in a state of extreme poverty. Consequently, even though the inclusion of the global subsidy raises the income of a large number of families above the extreme poverty line, if these families cannot turn the benefits received from the State into money or food it may be considered that in many cases the condition which originally led to them being classified as belonging to the extreme poverty group is still valid: that is to say, they are still not capable of acquiring the basic food basket.

In order to clarify this point further, on the one hand an estimate was made of the family income of the extremely poor group, taking account only of transfers in the form of cash and food, and on the other hand the income of those in the basic poverty group was estimated (including those previously in the extreme poverty group who had managed to emerge from this

condition through transfers in cash and food), taking into account the subsidy as a whole. The incidence of poverty after making this adjustment was then calculated (table 9B).

If we restrict ourselves to the items in question, total poverty still goes down by the same proportions as before, that is to say, for the country as a whole it drops to 10%, in the urban area to 8%, and in the rural areas to 12%. The composition of this poverty undergoes a radical change, however, for now extreme poverty at the national level goes down to 9% instead of the 3% registered when taking account of the entire subsidy, while in urban and rural areas it goes down to 6% and 12% respectively, instead of the 3% registered in both areas when taking account of the global subsidy. In other words, six percentage points of the reduction in extreme poverty at the national level registered when taking account of the global subsidy are due to items which do not involve transfers of cash or food and which are not necessarily capable of being traded in the market.

On the other hand, it is now basic poverty which shows a sharp drop. In the country as a whole it goes down to 0.7%, while it disappears completely in the rural areas and drops to 1% in the cities. This result is perfectly natural, since by restricting the criteria for overcoming extreme poverty, many of the families which in the previous calculations were above the extreme

Table 9 B^a
COSTA RICA: ESTIMATES OF ABSOLUTE POVERTY BEFORE AND AFTER PUBLIC SUBSIDY,
BY LEVEL OF POVERTY AND REGION
(Percentages)

	Whole country		Urban		Rural	
	Before	After	Before	After	Before	After
Proportion of poor families	25.7	9.8	19.0	7.7	33.4	12.3
Basic poor	13.7	0.7	10.6	1.3	17.5	-
Extreme poverty	12.0	9.1	8.4	6.4	16.0	12.3
Regional distribution of families						
All families	100.0	100.0	54.4	54.5	45.5	45.5
All poor	100.0	100.0	40.2	42.7	59.8	57.3
Basic poverty	100.0	100.0	42.1	96.8	57.9	3.2
Extreme poverty	100.0	100.0	38.0	38.4	62.0	61.6
Non-poor	100.0	100.0	59.5	55.8	40.5	44.2

^a In this case, in estimating the effects of the subsidy on the income of extremely poor families only transfers of cash and food were considered; in the case of families in a situation of basic poverty (including those formerly in the extreme poverty group who have managed to overcome this situation through transfers of cash and food) the total subsidy was taken into account.

poverty line but not above that of basic poverty are now relegated to extreme poverty, so that basic poverty becomes less widespread.

In conclusion, the main result of the exercise—that is to say, the drastic reduction in the magnitude of global poverty through the State supply of basic services to the Costa Rican population—is still maintained, even when the criterion for overcoming a situation of extreme poverty is that of access to transfers of cash and food. The point that must be emphasized in the second estimate is that combatting extreme poverty calls for transfers and social security programmes with very well defined objectives: that is to say, they must be precisely aimed. It must be recognized that overcoming the conditions which maintain families in extreme poverty is an essential requirement for enabling them to make effective use of the rest of the services provided by the State.

Table 10 shows the estimated average income after reordering the families according to their new status and assigning the global subsidy to all of them.⁶ Broadly, the subsidy raises the average income levels of all the families except urban families living in a situation of basic poverty. This improvement indicates that not only

has the incidence of poverty been reduced, but also its intensity, and this will become even more evident when we analyse the poverty gap.

The difference in income between the poor and non-poor does not register significant changes when the subsidy is introduced. The difference between those living in situations of extreme poverty and those suffering from basic poverty does decline somewhat, however, mainly because of the increase in income of the former.

If we look at the intensity of poverty, we see that when the subsidy is included, the family poverty gap goes down from 3 332 colones to 2 732 colones, while in per capita terms it goes down from 489 colones to 382 colones (table 11). The reduction in the family and per capita gaps may not be very impressive, but the amount by which the global gap goes down is considerable, since it falls from 439 million colones without the subsidy to 137 million with the subsidy: that is to say by more than two-thirds.

The global poverty gap is sensitive to changes in both the average income of the poor and in the number of poor families, so that the fact that the relative reduction in the estimated global gaps is greater than the drop in the respective family or per capita gaps indicates that the reduction in the number of poor families is the most important factor in the narrowing of the global poverty gaps. Furthermore, if we repeat

⁶ All the following estimates take account of the whole of the subsidy, regardless of the degree of poverty.

Table 10
COSTA RICA: TOTAL MONTHLY FAMILY AND PER CAPITA INCOME BEFORE AND
AFTER PUBLIC SUBSIDY, BY LEVELS OF POVERTY AND REGIONS
(Colones)

	Whole country		Urban		Rural	
	Before	After	Before	After	Before	After
Total monthly family income	14 029	17 662	17 623	21 789	9 724	12 717
All poor	4 850	5 497	5 165	5 440	4 639	5 540
Basic poverty	6 258	6 263	6 894	6 598	5 796	6 037
Extreme poverty	3 239	3 720	2 970	3 248	3 404	4 179
Non-poor	17 027	18 982	20 538	23 157	12 232	13 722
Per capita monthly income	3 743	4 604	4 871	5 902	2 393	3 049
All poor	875	982	962	1 030	817	945
Basic poverty	1 147	1 137	1 272	1 245	1 056	1 062
Extreme poverty	565	624	569	622	562	626
Non-poor	4 736	4 997	4 785	6 309	3 198	3 344

Table 11
COSTA RICA: POVERTY GAPS BEFORE AND AFTER PUBLIC SUBSIDY, BY TYPE OF
GAP AND REGION
(Current colones and percentages)

	Whole country		Urban		Rural	
	Before	After	Before	After	Before	After
Monthly global poverty gap						
Average per family	3 332	2 732	3 944	3 678	2 921	2 020
Average per capita	489	382	556	488	443	315
Global (millions of colones) ^a	439.2	137.2	208.9	79.3	230.3	57.9
Global/income of non-poor (%)	6.7	1.6	4.5	1.3	12.1	2.1
Monthly basic poverty gap						
Average per family	1 954	1 920	2 214	2 510	1 764	1 523
Average per capita	220	234	247	272	204	298
Global (millions of colones) ^a	137.4	67.4	65.6	35.4	71.8	32.0
Global/income of non-poor (%)	2.1	0.8	1.4	0.6	3.8	1.2
Monthly extreme poverty gap						
Average per family	4 908	4 603	6 138	5 860	4 156	3 381
Average per capita	800	763	949	896	693	634
Global (millions of colones) ^a	301.8	69.8	143.3	43.9	158.5	25.9
Global/income of non-poor (%)	4.6	0.8	3.1	0.7	8.3	0.9

^a Average per family, multiplied by number of poor families in each level.

the previous exercise of seeking to eliminate the national poverty gap through transfers from the non-poor, the latter would have to contribute 2% of their income, and the resulting amount would have to be divided into equal parts to eliminate the extreme poverty and basic poverty gaps. Similarly, if it were assumed that the regional poverty gaps were to be eliminated through intraregional

transfers from the non-poor, it is estimated that achieving this objective would need 1% of the income of the non-poor in urban areas and 2% in rural areas. In the latter areas, most of these resources would be needed to cover the basic poverty deficit, whereas in the cities they would be needed mainly to cover the needs of the extremely poor.

Conclusions

On the basis of the results obtained in this study, it may be asserted that the Costa Rican public sector has played a crucial role in caring for the needs of groups living in a situation of poverty, through the social programmes it operates. Implicitly or explicitly, there has been great concern in Costa Rican society for the marginated sector of the population. The resources assigned by the State to this group help to satisfy their basic needs, improve their income-generation capacity, introduce a notion of social justice, and reduce social pressures.

Many social science studies have been made with the aim of explaining the conformation and stability of Costa Rican society, which is based on principles of coexistence more advanced than those of other societies in the same region. These studies have shown that the efforts made by Costa Rican society to ensure that its citizens receive an adequate level of education, health care, food, water supply and other basic services are concrete positive elements which, together with the practice of democracy in that country, form an essential part of its material foundations.

In spite of the foregoing, however, the results of the present study also reveal some unsatisfied goals in a number of areas. The existence of families living in a situation of extreme poverty is one of these. The statistics show a reduction in the incidence of extreme poverty, thanks to the action of the State, but behind the figures is the reality of thousands of Costa Ricans who cannot fully satisfy their food requirements.

Likewise, the concentration of expenditure on higher education facilities for high-income families, the concentration of the housing subsidy among the non-poor in contrast with the

existence of a big housing deficit, and the big difference in income between the poor and the non-poor are other aspects calling for special attention. Fortunately, the patience which Costa Ricans displayed during the serious economic crisis that began in the mid-1980s, together with their enthusiastic response in the three national elections subsequent to that crisis, have shown their confidence that these problems can be dealt with inside the existing political, social and economic system of the country.

In recent years, as part of the free-market philosophy, an aggressive campaign has been unleashed against the public sector. This position, which has been adopted in the name of efficiency, can lead to an extreme outcome which runs counter to the principles of coexistence that have given Costa Rican society an outstanding place in the developing world. In addition to this, however, it must not be forgotten — as the cases examined by the World Bank in its *World Development Report 1990* show — that investment and public expenditure in the fields analysed in the present study are indispensable in order to bring about an increase in efficiency through improvement of the productivity of labour.

There is no doubt that the role of the Costa Rican State must be redefined in the search for economic efficiency. In view of the circumstances marked by a change in social thinking through which we are passing, however, mature reflection and prudence are advisable in considering changes in the economic and social structure. We trust that the continued accumulation of proofs such as have been presented in this paper will help to ensure a sensible approach to the future responsibilities of the State in Costa Rica.

Bibliography

- Beckerman, W. (1985), *Poverty and the Impact of Income Maintenance Programmes: Case Studies of Australia, Belgium, Norway and Great Britain*, Geneva, International Labour Organisation (ILO).
- ECLAC (Economic Commission for Latin America and the Caribbean) (1981), *La política fiscal como instrumento para modificar la distribución del ingreso. Una aproximación metodológica*, Mexico City.
- Gillespie, W. (1980), *The Redistribution of Income in Canada*, Ottawa, Cage Publishing Limited.
- Kakwani, N. (1980), *Income, Inequality and Poverty: Methods of Estimation and Policy Applications*, New York, Oxford University Press.
- Mata L. and S. Murillo (1980), Canasta básica de los costarricenses, *Revista Médica*, San José, Costa Rica, Hospital Nacional de Niños.
- Meerman, J. (1979), *Public Expenditure in Malaysia. Who Benefits and Why*, A World Bank Research Publication, London, Oxford University Press.
- Mohan, Rakesh (1984), An Anatomy of the Distribution of Urban Income. A Tale of Two Cities in Colombia, *World Bank Staff Working Papers*, No. 650, Washington, D.C., World Bank.
- Musgrave, R.A. (1968), *Teoría de la hacienda pública*, Madrid, McGraw-Hill Book Co..
- Prebisch, R. (1981), *Capitalismo periférico. Crisis y transformación*, Mexico City, Fondo de Cultura Económica.
- Selowsky, M. (1979), *Who Benefits from Government Expenditure? A Case Study of Colombia*, A World Bank Research Publication, New York, Oxford University Press.
- Taylor, M. (1986), *Poverty and Public Expenditure on Social Programs*, M.A. Thesis, Ottawa, Carleton University.
- Taylor, M. (1986), *Poverty and Public Expenditure on Social Programs*, M.A. thesis, Ottawa, Carleton University.
- Trejos, J.D. (1983), *La distribución del ingreso de las familias costarricenses: algunas características en 1977*, San José, Costa Rica, Instituto de Investigaciones en Ciencias Económicas, Universidad de Costa Rica.
- Trejos, J.D. and E. Elizalde (1985), *Costa Rica: la distribución del ingreso y el acceso a los programas de carácter social*, Documento de trabajo, No. 90, San José, Costa Rica, Instituto de Investigaciones en Ciencias Económicas.
- World Bank (1989), *World Development Report 1989*, New York, Oxford University Press, June.
- _____ (1990), *World Development Report 1990*, New York, Oxford University Press, June.

Prebisch and the relation between agriculture and industry

*Carlos Cattaneo**

This article focuses on one of the lesser-known facets of the vast and fruitful work of Raúl Prebisch in the field of Latin American economics: i.e., the work he did in the early 1950s on training in agricultural development plans and projects, at a time when this activity had barely begun in the countries of the region, at least on an organic and systematic basis.

This analysis of Prebisch's ideas in this field is based fundamentally on the cycle of five lectures which he gave in October 1951 as part of a course organized by the Latin American Training Centre on Agricultural Plans and Projects and Related Matters. These lectures have the great merit of showing us some basic concepts in Prebisch's thinking (such as his integrative concept of the economic development process of the region), analysed from the agricultural standpoint, as his lectures were directed to a public made up mainly of professionals connected with this sector, especially those discharging public functions in it.

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I The conceptual framework: development and undeveloped countries

In his first lecture in this cycle,¹ Prebisch defined undeveloped countries as those having the following characteristics:

i) a high proportion of their economically active population worked in agriculture and other branches of primary production. Prebisch considered this to be the most outstanding characteristic of such countries;

ii) this population employed in primary activities used primitive techniques inferior to those of the developed countries, and

iii) their population growth rate was high.

Prebisch established a relation between the first two aspects by postulating that a high proportion of the active population was employed in primary activities precisely because the techniques used were primitive. He also stressed that these characteristics were not incompatible with a high degree of development of certain primary activities, such as those oriented towards exports, in view of the special interest of the developed countries in such branches. The developed countries had made a significant contribution to the spread of technology to those activities, because they provided food and raw materials for their own development. In areas of production directed almost exclusively to the domestic market, however, the situation was different, although each country had its own special characteristics deriving from its natural resources, climate and other aspects.

Proceeding to the analysis of what constituted a development process, he defined it as "the gradual spread of modern production technology to primary production and all the other branches of the economy in order to increase productivity and hence raise the per capita income of the population" (Lecture No. 1, p. 4). The consequences of that process were the same

¹ Raúl Prebisch, "Problemas del desarrollo económico en América Latina", Lecture No. 1, Latin American Training Centre on Agricultural Plans and Projects and Related Matters, Santiago, Chile, 23 October 1951, *mimeo.*

as those observed in all the central countries: a gradual reduction in the proportion of the active population working in primary production (although Prebisch stressed that this phenomenon also took place in industrial production, since part of the population employed in such activities moved over to the services sector). That reduction was due to the increase in productivity resulting from the spread of technology, which meant that fewer workers were needed in order to produce the same amount of goods (both agricultural and industrial). The process had different features, depending on whether it concerned an undeveloped country or a developed country: whereas in the former the active population displaced by the increase in productivity moved from one sector of the economy to another, in the latter these moves were within sectors.

Obviously, this kind of definition raised doubts regarding the precise limits for considering a country developed or undeveloped. Even in the Latin America of those days, countries such as Argentina and Uruguay were on a similar level to countries such as the United States or Canada in terms of the percentages of their active population employed in primary and industrial activities. This situation was also observed in other countries which might very superficially be considered "agricultural", such as Australia, New Zealand and Denmark. Did this mean —asked Prebisch— that the development process had already ended in those countries? Obviously not! In those countries (and this was a point of fundamental importance in his analysis) there was a sufficiently wide margin for improving productivity in agriculture and transferring the "surplus" active population to industry or services. Prebisch posited that when this transfer of population took place *between* sectors, then the country in question was still undeveloped, whereas if it took place *within* sectors, then the country involved was a developed country.² Consequently, and by quite a wide margin, the Latin American countries (including Argentina and Uruguay) were still in the first-named category.

² "A country ceases to be undeveloped when agriculture and other branches of primary production are no longer able to provide appreciable numbers of workers for transfer to industry and other activities" (Lecture No. 1, p. 5).

In short, the transition from one state to another depended on the generation of increases in productivity in each sector and the existence of displacements of workers within the sectors. In order to back up these assertions, Prebisch presented in his lectures some figures for various of the cases analysed. He showed how in the United States the proportion of the active population employed in agriculture had gone down from 72.5% in 1820 to 21.1% in 1940, with the surplus personnel from agriculture being transferred to industry and, in particular, services; thus, the percentage of the population employed in industry rose from 12.1% in 1820 to 30% in 1940, while in services the percentage rose from 15.4% to 48.8% between the same years.³ He also highlighted the cases of New Zealand and Denmark, which in mid-century showed values similar to those of the United States.⁴

Prebisch then went on to analyse the causes of the decline in the population employed in primary activities in proportion as technology was introduced into them. He stressed in particular two factors: i) the changes that higher income caused in the population's demand, connected with the low income-elasticity of food (Engel's Law) and ii) the changes that technology brought with it in the use of foodstuffs and raw materials (lower proportions of these in the final product, replacement of natural raw materials by synthetic products, and greater efficiency in their use through integral utilization of by-products).

In addition to these elements, which Prebisch

³ Prebisch said that the fact that the shift of population from agriculture was to services rather than industry was due to an inherent characteristic of economic development, which required a larger amount of services (commerce, transport, State activities, etc.) as the process was intensified. He also warned, however, of an aspect which was to be observed in the undeveloped countries: i.e., the existence of a wide range of services of very low productivity (Lecture No. 1, p. 6). Later, in the second lecture which he gave on this course, he mentioned this as an additional factor tending —through the downward pressure it exerted on wages, which was transferred to prices— to cause a deterioration in the terms of trade which adversely affected the countries producing primary commodities (Lecture No. 2, p. 6).

⁴ In 1945, 23% of the economically active population of New Zealand worked in agriculture, 30.6% in industry and 46.2% in services. In the case of Denmark, the 1940 figures were 29% for agriculture, 32.6% for industry and 38.5% for services (Lecture No. 1, p. 7).

described in an extremely detailed manner, there was another factor of great importance in his analysis: the fact that in industrial demand, the proportion accounted for by raw materials did not grow as fast as the value of the product. Thus, he said, "as production technology advances it is not possible for the same proportion of people previously employed in the primary production sectors to continue working in them, because changes in demand and in the type of products mean that relative demand for primary commodities will account for a progressively smaller share of the total demand of the community. Thus, it is absolutely inevitable that there should be a decline in the population employed in primary production as production technology advances" (Lecture No. 1, pp. 8-9).

From this fact, Prebisch drew one of the most important arguments for defending the need to industrialize the countries of the region, when he raised the question of where there could be industrial growth to absorb this displaced primary population. From his analytical standpoint, it was not reasonable to locate still more industry in the developed countries, since in practice the latter lacked an essential condition for making this feasible: the mobility of the human factor was hampered both by the restrictions that those countries imposed on such movement and by another series of characteristics (including those of a cultural nature to which Prebisch gave some prominence) which made labour mobility impossible in practice. Prebisch noted that, on the contrary, the process had taken place in the opposite

manner: the population displaced from primary production by technical progress had not moved to the industrial centres, but instead the machinery from those centres had tended to come to places where there were "people displaced by technical progress: that is to say, this process entails the industrialization of the periphery, as a most essential condition for the progress of agricultural technology" (Lecture No. 1, pp. 9-10). Indeed, Prebisch's analysis even went so far as to question the need to extend technology to agriculture unless there were at the same time a process of industrialization of the countries of the region: "... to a large extent, there would be no point in extending technology to primary production, since if the people thus displaced from their jobs cannot emigrate and it is not possible to bring machinery in to industrialize their countries, then what will they do? What point would there be in technical progress in agriculture if the people displaced by this progress could not find jobs in other productive activities? There would be little or no sense in this" (Lecture No. 1, p. 10).

Hence, for Prebisch, the industrialization of the periphery does not represent a choice, but a necessity imposed by the growth process itself: "There is no longer any question as to whether or not it is necessary to create industries when a country develops. It would appear to be totally inevitable that technical progress itself will make it necessary to create industries in order to absorb the people that cannot find jobs in agriculture and primary production ..." (Lecture No. 1, p. 9).

II

The relation between agriculture and industry within the context of a development process

In the second lecture of the course,⁵ Prebisch tackled the subject of the relation between agri-

culture and the other sectors of the economy in the development process. To begin with, he did so through questions which he put to his students as a stimulant. These questions were the following:

— Why has agriculture developed relatively slowly in some countries compared with industry?

⁵ Raúl Prebisch, "Problemas del desarrollo económico en América Latina", Lecture No. 2, Latin American Training Centre on Agricultural Plans and Projects and Related Matters, Santiago, Chile, 24 October 1951, *mimeo*.

— Why is it that industry is usually prosperous, but not agriculture?

— Why is it that in some countries traditional agriculture producing for domestic consumption has grown slowly whereas other new products for domestic consumption or certain export items have grown rapidly?

While it was not his intention to try to arrive at definitive conclusions which would solve these complex matters, Prebisch tried to set forth what he called an "analytical methodology" aimed at separating and suitably appraising the various elements that came together in inter-sectoral relations. He considered that the lack of a proper objective diagnosis of the situation—due precisely to the lack of a suitably rigorous method of analysing the problems—was a fundamental shortcoming which must be overcome.

Taking up the thread of his previous lecture, Prebisch started out from the following concept: the proportions of foodstuffs and industrial products which enter into overall consumption depend on the level of income and the preferences of consumers. Consequently, if the level of income in a country remains constant and there is merely an increase in population, even if the per capita food consumption is very low compared with a recommended diet or with the potential resources of the country, the consumption of food will not increase. He drew a first conclusion from this: if there has been no increase in average per capita income, it can reasonably be assumed that the stagnation in food consumption is due to general factors *other* than those concerning agricultural production.

In order to demonstrate this assertion, he formulated a hypothesis in which he isolated the foreign trade variable by assuming it to be constant and limited his analysis to only two sectors: agriculture and industry. He also assumed that there were no limitations on the mobility of labour from one sector of production to another. Thus, he posited that the lack of congruence between the growth of industry and that of agriculture was due to two types of factors: i) those connected with the *demand* for agricultural products, foodstuffs and raw materials, and ii) those concerning *agricultural production* and the degree to which such production responds to the stimuli of industry and other sectors. Among these factors, he primarily stressed all those relating to

technical progress in agriculture, dealing with the question of land tenure last of all.

This sequence showed the order of priorities which Prebisch assigned to the factors limiting agricultural development and also the sequence which he recommended for a proper study of the topic. Briefly, his approach was along the following lines: first of all, the demand for agricultural products should be studied, and if the limitations were not found to be in this area, the analysis should move to the question of supply, observing whether or not there was technical progress in agriculture, and if there were, looking into the structural factors involved, among which land tenure was one of the most important.

From this starting point, in order to verify the fulfilment of his hypothesis Prebisch embarked upon the analysis of various cases which showed how these factors worked in different situations. The elements he took into account were:

a) *Absorption of labour by industry*

In this respect he posited three situations:

- i) industry was not even capable of absorbing natural population growth;
- ii) industry absorbed only the extra labour due to natural population growth;
- iii) industry absorbed not only the labour produced by natural population growth but also that which was surplus to the requirements of the primary sector.

b) *The absence or existence of technical progress in industry*

Bringing all these elements together (table 1) generated six different situations with different effects on agricultural development. Of the six situations presented, only three represented a stimulus for agriculture (cases 3, 5 and 6). In the other situations (cases 1, 2 and 4) either the extra labour due to the natural population growth was not absorbed, or else it was absorbed, but without simultaneous technical progress in the industrial sector.⁶ In these circumstances, there was no stimulus for agricultural production, since if the development of industrial pro-

⁶ In reality, a stimulus was generated in case 4 too, but it was only very slight.

Table 1
EFFECTS ON AGRICULTURE OF THE RELATION BETWEEN THE ABSORPTION OF LABOUR
AND EXISTENCE OF TECHNICAL PROGRESS IN INDUSTRY

Technical progress industry	Absorption of labour by industry	Natural population increase not absorbed	Only natural population increase absorbed	Natural population increase and surplus labour from primary sector absorbed
	Does not exist:	Case 1 Stagnation of agriculture/unemployment	Case 2 Slow growth of agriculture	Case 3 Demand for foods acts as stimulus for agriculture, leading to incorporation of technology (mechanization, etc.)
Exists:	Case 4 Very weak stimulus for agriculture	Case 5 Demand for foods acts as stimulus for agriculture, leading to incorporation of technology (non-mechanical)	Case 6 Heavy demand for foods acts as strong stimulus for agriculture, leading to incorporation of technology (mechanical, etc.)	

Source: Prepared by the author on the basis of R. Prebisch, "Problemas del desarrollo...", Lecture N° 2, *op.cit.*

duction was slow and only took place through the absorption of the increase in the economically active population, the development of agriculture must necessarily be slow too. Prebisch asked: "Why should it be any other way? What incentive could agriculture have in this hypothesis for developing more quickly than industry? What incentive would an agricultural entrepreneur have for increasing his production beyond a level matching the degree and intensity of the demand from industry?" (Lecture No. 2, p. 4).

When he analysed these cases, Prebisch rejected the possibility that there could be "autonomous" development of agriculture, independent from that of industry, in view of the limitations necessarily affecting such an independent evolution. He maintained that: "once certain narrow limits have been passed, it is inconceivable that industry should develop more rapidly than agriculture or that agriculture should develop more rapidly than industry. There is a close interdependence between the two sectors of production which prevents one of them from developing more rapidly than the other" (Lecture No. 2, p. 8).

Although cases 3, 5 and 6 offered a stimulus for agricultural development, they reflected different situations. Case 6 was that which offered the best conditions for agricultural development. The expansion in industry attracted workers from the agricultural sector because of the pay-

ment of higher wages, thus bringing about a shift in population. Since in addition there was an increase in productivity in industry through the introduction of technical progress, the stimulus for agriculture reached its maximum level. As Prebisch said: "the broader the growth in industry, the greater the need for raw materials and for food for the population of industrial workers which has not only increased in number but also in per capita income" (Lecture No. 2, p. 6). In case 5, where industry only absorbed the extra labour due to natural population growth but did nevertheless register technical progress, and in case 3, where the excess labour from the agricultural sector was absorbed without any technical progress in industry, a stimulus was given to agriculture too, but it was less than in case 6.

After making this analysis, Prebisch was able to define clearly those situations where the unsatisfactory growth in agriculture was due to factors outside the sector. In the remaining situations, the key questions were: what obstacles stood in the way of increased agricultural production, and what prevented agriculture from reacting to the stimulus given by industry? Through this method of analysis, Prebisch progressively delimited and defined the different situations in order to arrive at the most suitable diagnosis in each case.

With regard to the three cases which were "favourable" to agriculture, Prebisch held that it

was necessary to study the various elements in them which affected agricultural production, so as to discover the "internal" factors limiting its development. He raised the question of whether land was available for extending the planting of crops and thus increasing agricultural production, and whether or not there was technical progress in agriculture.

He then went on to analyse one of the most serious problems for the region in this field: i.e., the shortcomings in the generation and dissemination of agricultural technology. Prebisch put forward by way of example the case of the United States, where the State had played a fundamental role through experimental stations, universities, land-grant colleges and other institutions. There, he said, the development of agricultural technology had been "the result of a process of socialization of technological research". He held that "only to a small extent" had it been the result "of individual actions by entrepreneurs who invest resources in the promotion of a technical innovation", since, unlike the situation in industry, "the agricultural entrepreneur does not usually have at his disposal the enormous resources needed for technological research and its dissemination". If the situation of the United States is compared with that of the Latin American countries, "where governments are spending only a tiny part of their resources on technological research and its dissemination to agriculture", said Prebisch, "we see why in many cases, in spite of demand incentives, agriculture has responded in such a makeshift and piecemeal manner". Consequently, he said, "even when there are powerful factors acting as an incentive for agriculture, it will not respond to them until there is simultaneously intensive action in the field of technology" (Lecture No. 2, p. 9).

In theoretical terms, the natural reflection of the absence of technological progress was the stagnation of the sector. At the same time, however, not all problems were solved simply through the incorporation of technology, since it might well be unsuitable for the various situations which existed.

With regard to case 5, for example, Prebisch held that in this case it was desirable to introduce technologies which increased the production per hectare without affecting labour use: in a case like this, mechanized technology would be coun-

terproductive. In this respect, he argued: "... what point would there be in reducing or saving labour in agriculture if industry does not have sufficient dynamic force to absorb this extra labour? It would simply be a question of changing one type of disguised unemployment (due to the low productivity previously displayed by agriculture) for other types of unemployment, giving rise to a situation where people either stand around in the fields without anything to do or concentrate like parasites in the cities" (Lecture No. 2, p. 12).

This situation contrasted with that seen in case 3, which could have resulted (as would need to be verified more accurately in a real situation) in favourable conditions for the introduction of labour-saving technologies such as mechanization.

After appraising the technological aspect, Prebisch mentioned the land tenure system as an obstacle to agricultural development. He only arrived at this point in his analysis, however, after having considered the limitations connected with the demand for agricultural products and the technological constraints on the supply side. As he said: "If the agricultural sector of a country has enjoyed favourable demand from industry and other sectors, has had at its disposal forms of technical progress which the far-seeing action of the State has made available to it, and has also had—either from private enterprise or through the action of the State—the necessary resources for capital investment and the introduction of new technical procedures, and yet if in spite of all this agriculture has still not developed, then we must see if it is not the land tenure system which is acting as a negative factor in all this".

He explained the economic reasons—connected with the appropriation of rents—why a rural landowner could leave his land producing inefficiently without this seriously affecting his interests, and he blamed the lack of response to stimuli by this type of producer to the fact that "because of the size of his holdings, the mere increment in land rents gives him sufficient means to live more or less comfortably without the problems and difficulties involved in any kind of process of assimilation of technology" (Lecture No. 2, pp. 10 and 11).

Towards the end of the lecture, Prebisch stressed once again the need to recognize the

intimate relation between the development of agriculture and that of industry and to act accordingly, eschewing absurd sectoral positions visualizing the growth of one of these sectors to the detriment of the other. He ended his lecture with the following words: "there is a very marked and close interdependence between agriculture, industry and the various other sectors of activity of a country, and ... in order to make our diagnosis of the problems affecting agriculture ... we must not base ourselves solely on the study of each of these sectors in isolation or concentrate on the possible demand potential that an indi-

vidual may have without taking into account his income; instead, we must consider the economy as a whole. ... It is therefore inconceivable that one of these lines can diverge very markedly from the other, because this would give rise to imbalances whose immediate manifestation is the deterioration of the terms of trade between the two sectors. Nor is it conceivable that highly advanced technical progress in one line should not be accompanied by technical progress in the other, since this would cause maladjustments with the most serious consequences" (Lecture No. 2, pp. 11-13).

III

Agriculture and the deterioration of the terms of trade

In this third lecture,⁷ Prebisch took up the arguments of his previous lecture again, but dwelt on only one of the relationships with which he had been working: that concerning the existence of demand for foodstuffs by the developed countries. In this connection, he said, it was not possible to take the mobility of labour for granted, since in practice such mobility did not exist in the relations between developed and undeveloped countries, both for natural and social reasons and because of the "artificial barriers" erected by the first-named countries. That fact marked a fundamental difference from previous analyses made within the economy of a country, and it was therefore a key element in explaining the deterioration in the terms of trade. Prebisch maintained that not only was there no mobility of labour from the undeveloped to the developed countries (which, according to the theoretical postulates of the classical economists, must necessarily take place with the introduction of technical innovations in the forms of production used by the latter) but, in fact, the only case of major movement of labour at the international level

had taken place in a direction which was the opposite to that needed in order for the excess labour of the undeveloped countries to find employment in the industrial countries. That movement had taken place in the second half of the nineteenth century, when there were big migrations from the European countries—especially the Mediterranean lands—above all to the United States, Australia and South America.

Since the processes of transfer of labour to the developed countries had not taken place, the *virtual* excess of labour (that which technical progress could generate in the primary production sector) would tend to freeze or depress wage levels in the undeveloped countries, resulting in a decline in the prices of their products. In the developed countries, in contrast, the opposite would take place: there, instead of helping to reduce the prices of industrial products through the lower operating costs, technical progress would tend to raise wages.⁸

In short, the developed countries would transfer the real drop in production costs due to technical progress to wage rises and would therefore maintain the level of prices of their products.

⁷ Raúl Prebisch, "Problemas del desarrollo económico en América Latina", Lecture No. 3, Latin American Training Centre on Agricultural Plans and Projects and Related Matters, Santiago, Chile, 25 October 1951, *mimeo*.

⁸ For a detailed explanation of this process, see Armando di Filippo, "El deterioro de los términos de intercambio, treinta y cinco años después" in *Pensamiento Iberoamericano*, No. 11, Madrid, January-June 1987, pp. 365-369.

In contrast, the lack of progress in industrialization in the undeveloped countries would give rise to the opposite situation (table 2).

Table 2
EFFECT OF LABOUR SURPLUS DUE TO
INCORPORATION OF TECHNICAL PROGRESS

In developed countries:

Wages rise
Prices of goods do not go down
Technical progress is incorporated
Benefits of technical progress are retained

In non-developed countries:

Wage levels remain unchanged or go down
Prices of primary commodities go down
Benefits of technical progress are not retained

Prebisch said in this respect: "By creating a labour surplus, technical progress demands that this labour should be absorbed by industry. And it is only if this labour is vigorously absorbed by industry that it will be possible to prevent the fruits of technical progress from being transmitted abroad in the form of lower prices. This explains the fundamental importance of the development of industry and other activities in order to absorb the surplus of manpower generated by technical progress in the primary production sector" (Lecture No. 3, p. 5).

On the basis of this argument, he indicated the "pointlessness" of disseminating technical progress in agriculture unless there was a parallel process of industrial development: "What would happen, I ask you, if this drop in the employed population were not matched by a dynamic force in industry and other activities that could absorb this population, provide it with the means of subsistence, and prevent it from adversely affecting the agricultural sector by tending to keep down wage levels? What good would it be to a country which is operating its agricultural sector with primitive techniques if it incorporated modern procedures which displaced labour from the sector but caused that same labour surplus to weigh down on rural wage levels" (Lecture No. 3, p. 6).

Linking together the two questions—that of intersectoral relations and that of the deterioration in the terms of trade—he said that "all the savings obtained through the reduction of production costs would merely be reflected in a drop

in international prices and, instead of making it possible to raise domestic wage levels, the results of the technical progress thus introduced into agriculture would oblige the country, because of the pressures of higher production, to lower its prices, so that instead of remaining within the country, the fruits of technical progress would be transferred abroad" (*Ibid.*).

Prebisch then pursued his analysis of his theory of the deterioration in the terms of trade, although he did so cautiously and sought to keep down the tone of his formulations, noting that: "... I am not at this moment seeking to put forward any general theory on the terms of trade, but merely explaining a simple mechanism without which it would not be possible to understand the problem of the terms of trade ... I have not formulated any kind of immutable law but simply drawn attention to a phenomenon which occurred in a certain period of time under the influence of certain forces" (Lecture No. 3, pp. 6-7).

In referring to the factors intervening in the price movements registered among the countries producing foodstuffs and raw materials, he emphasized the following elements:

a) In the developed countries:

i) the intensity of industrial growth (which has a disproportionately small effect on the demand for foodstuffs and raw materials); and
ii) the barriers placed in the way of the entry of raw materials and foodstuffs from the undeveloped countries.⁹

b) In the undeveloped countries:

i) the population growth rate;
ii) the intensity of the technical progress taking place in the primary production sector;¹⁰
iii) the amount of land available; and
iv) the extent of the absorption of surplus labour by industry and other activities.

The existence of different relations between the prices of primary commodities and those of

⁹ This question, which was one of Prebisch's main concerns during his period at the head of UNCTAD (1964-1969), was dealt with in detail in the next lecture in the course we are analysing here.

¹⁰ Both factors (this one and that referred to in note 9 above) exerted considerable influence on the type of employment and on wage levels.

industrial products, he observed, was explained by the combination of the above elements, which gave rise to a very varied range of situations. Prebisch's theory regarding the behaviour of these factors sought to explain why those relations acted to the detriment of primary commodities. In order to demonstrate this theory, he took as his first example the opposite case: that is to say, one in which the terms of trade improved for a country producing such goods. In order for that to take place, one or more of the following situations had to exist: a) an increase in demand for the goods in question by the central countries; b) the absence of a plentiful supply of land for the production of the goods, or c) the easy incorporation into industry, at higher wages, of the labour displaced from the production of those goods because of the incorporation of technology.

Prebisch maintained: "There are therefore a number of favourable factors (in this case) ... which help to keep up the value of the goods in question through active demand and enable the technical progress introduced into this branch of production to give rise to higher wages. Why? Because in proportion as there is a surplus of labour, it is absorbed by industry at higher wages, and when it is absorbed at higher wages there also tends to be an increase in the wages of agricultural workers: that is to say, the introduction of technical progress has not caused wage levels to stagnate but to rise, assuming, of course, that the price of the goods in question has remained stable during the process of technical progress" (Lecture No. 3, pp. 9-10). In this hypothesis, the terms of trade of the goods in question with the industrial countries would have remained constant.

Another situation in which there would be an improvement in the terms of trade in favour of primary commodities would take place when it became necessary to use new land of lower productivity to satisfy the demand for the goods. In that case, argued Prebisch, there would be an increase in land rents which would be reflected in an increase in the price of the goods, with consequent favourable effects on the terms of trade.

An analysis of what happened in agriculture in Argentina gave Prebisch an additional argument to back up his theory. In the 1920s, a pro-

cess of mechanization of agricultural work was begun in that country because of the "high" cost of labour. Prebisch considered that this process perhaps went too far in economic terms, since within a short period there was a labour supply which was required neither by agriculture, which had now been partially mechanized, nor by industry, which was still in an incipient stage at that time. Consequently, wages did not rise, and this displaced labour became an incentive for extending production, thus helping to give rise, as a final result, to a situation of over-production of certain cereals (such as wheat) in the world. Prebisch concluded his analysis of this case in the following words: "this is a typical example of how technical progress tends to transfer its benefits to the countries which purchase primary commodities rather than remaining in the producer countries. *An essential condition in order to prevent this occurring is a high degree of absorption of the surplus labour.* When scanty absorption of the surplus labour force by industry is combined with an abundance of land opened up due to the expansion of means of transport, this represents the combination of two factors which are unfavourable from the point of view of prices. One of them prevents a rise in wages, while the other reduces production costs still further by bringing into cultivation land with higher yield. Thus, the lower the degree of absorption of labour in industry and the higher the degree of opening up of new land, the stronger will be the effects on the levels of international prices (Lecture No. 3, p. 13).

Prebisch concluded this part of his lecture by setting forth his ideas on the matter in the light of the most usual situation (drop in prices and deterioration in the terms of trade) registered with respect to the products of the Latin American countries: "This drop is probably due to the fact that while the benefits of the technical progress of the industrial countries have remained in those countries through the well-known phenomenon of higher wages, it may well be that in the countries which depend on primary products, because of the high rate of population growth and the slow industrialization — and I might also say because the terms of trade have deteriorated— all these factors have helped to transfer the benefits of technical progress in the countries producing primary commodities to the

industrial countries, through a relative drop in prices (*sic*)" (lecture No. 3, p. 14). He also noted, however, that this theory could only be proved in absolute terms when a study was made on the

variations in prices on an article-by-article basis, in order to see how the factors inherent in the situations of the developed and undeveloped countries had operated in each case.

IV

Agriculture, industry and international trade

In this fourth lecture,¹¹ Prebisch began his reasoning process by asking whether or not it suited the undeveloped countries to embark on industrialization. In the light of the arguments of classical theory, the response must be a downright no. According to the logic of this school of thought, these countries should concentrate on producing more and better primary commodities in order to trade them for the manufactures produced in the centres. Why? Because industries installed in an undeveloped country could not compete, on account of their lower productivity, with similar industries already installed in the centres, unless some kind of protection was arranged. This raised the question: why use labour in "artificial industries" whose production costs are higher than in the great industrial centres, thus making necessary customs protection? Why, instead of using this labour for industrial production, should it not be used to increase agricultural production and thus expand exports? (Lecture No. 4, p. 3).

As we all know, Prebisch's views in this respect did not coincide with the classical theories. This was confirmed by his assertion that "even though the productivity of the labour employed in such an industry may be well below that of the labour employed in the same kind of industry in an advanced industrial centre, there is nevertheless every justification for setting up such an industry if it gives employment to labour which has been displaced from the primary production sector by technical progress and would otherwise

not be employed. To the extent that this labour contributes to a net increase in the production of goods that the country needs, then there will be a net increase in the country's income" (Lecture No. 4, p. 4). Indeed, Prebisch reasoned that: "because of technical progress, not so many people are needed in the primary production sector but more workers are required in order to satisfy the demand for industrial goods and services. If this is so, then it is not possible to see, logically, how undeveloped countries which have a high proportion of their economically active population in the primary production sector should continue to keep up that high proportion despite technical progress, sending abroad the agricultural products which they cannot consume themselves". Finally, he said: "The mere statement of this hypothesis shows how absurd it is to pretend that, despite the introduction of technical progress, the proportion of the active population employed in primary production should be maintained at the same level".

It is worth noting here, however, that Prebisch's position on this subject was not absolutely categorical. He mixed it with a good deal of pragmatism when he recognized that the question which should really be asked was: "which is better, to employ these people by using the capital available to a community for industrial production or by using it to increase primary production and to export a larger quantity of such products?" (Lecture No. 5, p. 5). His answer was that this dilemma must be determined in the light of the results that each course of action would give.¹²

¹¹ Raúl Prebisch, "Problemas del desarrollo económico en América Latina", lecture No. 4, Latin American Training Centre on Agricultural Plans and Projects and Related Matters, Santiago, Chile, 23 October 1951, *mimeo*.

¹² "We cannot take account only of the physical increase of production that would result from the employment of the labour made surplus by technical progress and by population

Thus, said Prebisch, perhaps in a small country whose production had little effect on the world market it would be reasonable to increase exports by channeling more resources towards agricultural production rather than towards the industrialization process. This would be so, provided that an increase in exportable output was not reflected in a drop in prices that would prevent a net increase in the income obtained. That is to say, it would be necessary to take account of the nature and size of the effect on prices in order to give a proper answer. If the answer were encouraging, concluded Prebisch, then it would indeed be advisable to increase exports rather than promoting industrial development.

He then went on to analyse more general situations, however, and approached the subject from a broader perspective, which led him to make a key assertion: before deciding in favour of one or the other of the alternatives, it was necessary to make a detailed analysis of the situation of each of the Latin American countries. He concluded that: "any increase in production beyond that required by the growth in demand — except in the case of some products which are affected in a particularly favourable manner by technical progress — leads to a drop in prices which may often be very severe, depending on the elasticity of demand" (Lecture No. 4, p. 6).

As we can see, Prebisch did not reject out of hand the "theoretical" possibility of taking advantage of the surplus labour force to secure increases in primary production. He took an objective attitude to the matter, however, and asked whether the whole of this production could really be sold on foreign markets without excessively affecting prices. The real situation in world trade at that time indicated that this was not possible, so that although this option might exist in theory, in practice there was no option but to promote industrialization. In order to demonstrate his assertions in that respect he even carried out a small numerical exercise.¹³

Bearing in mind, however, that in Prebisch's concept underdevelopment was a stage which

could eventually be left behind, it was necessary to think of a possible change in this respect when the undeveloped countries had reached the "rank" of the developed countries. In that case, when the population structure of the former came close to that of the latter, the continued absorption of agricultural labour in order to transfer it to industry would begin to be reflected in increasingly high costs. When that point was reached, argued Prebisch, the country would indeed have to pay close attention to the allocation of its productive resources to the various activities: the international trade problems would then be presented in the old classical terms. "Before that point is reached, however, as long as there is a labour surplus which cannot be economically absorbed by an increase in exportable production, then it is in the interests of that country to take that labour out of primary production and transfer it to industrial production, even though the latter may have higher costs than those of the international market" (Lecture No. 4, p. 9).

This clearly shows that in 1951 Prebisch did not totally reject the postulates of classical economics, considering them valid or suitable for explaining certain situations but not others, such as those concerning the undeveloped countries. Only when the latter countries had been turned into developed nations would the mechanisms described by the classical economists in this connection function perfectly. Before that point — which Latin America was still far from reaching — the application of such postulates would merely tend to aggravate the economic and social situation.

Prebisch stressed the importance of drawing a clear distinction between the above two stages in the development of a country in order to determine objectively the most suitable policy. In that respect, he slipped in a criticism of the Report of the Currie Mission to Colombia¹⁴ because it maintained that the installation of a steel industry would only suit that country if the production cost was equal to or less than the cost of

growth. We must also look at the economic result that would be given". (Lecture No. 4, p. 6).

¹³ Prebisch placed much emphasis on the low income-elasticity of demand for primary commodities, which could contribute to a glut of such goods.

¹⁴ "Bases de un Programa de Fomento para Colombia. Informe de una misión dirigida por Lauchlin Currie y auspiciada por el Banco Internacional de Reconstrucción y Fomento en colaboración con el Gobierno de Colombia", Bogotá, Imprenta del Banco de la República, September 1950.

the imported product. For Prebisch, "the theoretical concept underlying this appraisal is based on premises quite different from those arising from the actual conditions of these countries which have available human potential" (Lecture No. 4, p. 10). He went on to insist on one of his central topics: the need to incorporate technical progress in both agriculture and industry. Why? Because this surplus available labour was not real: it was potential or virtual—it was the surplus which would be produced when technical progress was introduced in primary production.

Prebisch also recommended acting cautiously in this field, however. There could be no question of "sacrificing" agriculture in favour of industry. Bearing in mind perhaps the situation of Argentina in that period, he reflected: "we have seen many cases in Latin America, and indeed some very important recent cases, where labour has been taken from primary production without having given that sector the means for introducing the technical progress that would make such labour surplus. Thus, labour has been taken away from the sector when there was not a real surplus, but only a virtual one. There might have been a surplus of labour if, for example, agriculture had been mechanized or if yields had been increased to such an extent that a smaller cultivated area would have been enough to cover domestic consumption and export needs. A country which makes the mistake of prematurely withdrawing factors of exportable production in order to transfer them to industry would be causing an economic disturbance which might or might not be temporary, depending on the measures taken by that country to introduce into agriculture or into primary production the technical progress needed to enable that production to grow again" (Lecture No. 4, p. 11).

Once again showing his pragmatic attitude to the subject, he argued: "I do not establish my position in absolute terms, but in very relative terms. This surplus population must exist, but it will not do so unless industrial development has been accompanied by parallel technical development of agriculture. Otherwise, industry will stifle agriculture, causing serious problems for it without giving any timely solution". He went on to recommend: "instead of seeking to correct an imbalance of this nature, it is quite obvious that it would be better to forestall it, that is to say, it

would be better to promote industrial development to such an extent as to absorb the workers being made redundant by technical progress in agriculture, and nothing more. I should like to place some stress on this aspect of the problem, in order to warn you in good time of the perils of the generalization of a situation of this type" (*ibid*).

On a more theoretical plane, he went on to analyze the changes implicit in the industrialization process. He also entered (remember that we are talking about a lecture given in 1951) on a matter which is quite topical today: that of the subsidies given by developed countries to their primary activities. Why do these countries need to give subsidies? The explanation given by Prebisch was the following: "industrialization causes a rise in wage levels, or at least it leads to the transfer of people who were working for low wages in primary production to industry, where wage levels are higher. In this respect, it increases the average wages of the community. If there is considerable labour mobility in a country, then this phenomenon of the transfer of workers from a low level to a higher level gradually raises the average wage level. Consequently, there is a rise in the wages paid in poorly paid occupations, both in agriculture and in domestic service: a typical case of the absorption of workers by more productive activities. Now, if this is so, if wages rise through this process of 'contagion', of leveling-up as we have seen, and there are export activities whose technology has not been improved sufficiently to allow them to pay these higher wages, what is going to happen? The answer is that such activities simply cannot continue competing on the world market" (Lecture No. 4, p. 12). In such circumstances, it would be necessary to subsidize the activities in question in order to bring wages in all branches of production up to approximately the same level while not losing competitiveness due to the increased prices deriving from this process. Subsidies therefore had two causes: i) the trend towards the equalization of wages, and ii) the unequal technical progress of the different sectors and branches of the economy.

Prebisch put forward by way of example the case of the United States: "Why has the United States ... in spite of its tremendous efficiency in

certain lines of production, had to give protection from foreign competition not only to agricultural activities but even to certain industries? It has had to do so for the same reason: perhaps because in these industries productivity has not progressed as much as in other sectors or in other countries, or perhaps because in other competing countries wage levels have risen less than in the United States, because of the smaller increases in productivity. Thus, in order to make up for this wage differential it has been forced to resort to protection" (Lecture No. 4, p. 12).

Comparing this example with that of the Latin American countries, he said: "If this is the situation in the United States, then we should try to get a clear idea in our minds of what the problem is going to be like in countries with much smaller resources and potential, and we should not be surprised at the need for protection in countries with a capital density as low as ours" (Lecture No. 4, pp. 13-14). He went on to add: "Our countries are countries which have little capital. The average level of per capita capital is far below that of the industrial countries. How can it be possible, then, if productivity is a function of the per capita level of capital, that countries which are still in a backward stage of economic development can suddenly acquire the levels of productivity of the industrialized countries without possessing the necessary capital for

this? ... If we cannot achieve similar levels of productivity, then how can it be maintained that we can develop our industry to absorb the surplus labour from the primary production sectors without suitable customs protection? Such protection will have different degrees of justification, of course, according to the industries in question, but it seems clear to me that, in view of the difference in productivity, it would not be possible to establish the large number of industries needed to absorb labour and raise the total productivity coefficient without making use of protection" (Lecture No. 4, pp. 13-14).

Now, Prebisch—and he was to make this abundantly clear in many of his subsequent works—was never in favour of indiscriminate protection. What he was talking about in this lecture was "the protection needed to make up for differences in productivity. There is a world of difference between this and the idea of defending wholesale and exaggerated protection" (Lecture No. 4, p. 15).

Could there be some solution which avoided the use of subsidies? Yes, indeed there was such a solution, but Prebisch rejected it out of hand, for it involved the lowering of wages, which would bring with it, as he himself had pointed out in previous lectures, a deterioration in the terms of trade with its whole sequel of adverse effects for the countries of the region.

V

A development programme and policy

In this fifth lecture,¹⁵ Prebisch first of all stressed the neutrality that economic development plans should have in order to ensure that they were free of any possible suspicion of being merely ideological. For Prebisch, a programme was a mechanism which could be adopted and used within the context of various global policies,

whether they were markedly "interventionist" or were based on unrestrained private enterprise.

The need to adopt a programme was due to the need to foresee the course of events. Recalling no doubt his own experience in Argentina in the 1930s, he noted that in the Latin American countries, during the Second World War and the immediate post-war period, "improvisation due to the effect of new and often unforeseeable circumstances" had led to a series of maladjustments and imbalances which were "hindering the smooth and orderly development of our economies". Those maladjustments were both external

¹⁵ Raúl Prebisch, "Los problemas del desarrollo económico en América Latina", Lecture No. 5, Latin American Training Centre on Agricultural Plans and Projects and Related Matters, Santiago, Chile, 29 October 1951, *mimeo.*

and internal, and the imbalances were a dynamic consequence of the growth process itself. Except in the case of Venezuela and one or two other countries, the exports of the Latin American countries did not expand sufficiently to allow a growing country to satisfy all its related import needs. However, said Prebisch, "the fact that this persistent tendency towards imbalance exists in a considerable number of cases does not mean that such imbalance is an inevitable consequence of growth". In his opinion, the existence of such imbalance was due to the way the development process had taken place in the countries of the region: "devoid of any kind of programme". Consequently, in his view the establishment of a programme represented a precautionary act, "an elementary act for taking in good time measures which, when improvised, lead to upsets and maladjustments, as experience has shown" (Lecture No. 5, pp. 4-5).

Prebisch stressed later on that the programme did not specify how the State should operate in order to meet the requirements. "We do not hold an opinion on this", he said, but only on "the need to take some measures, by one means or another, to solve this problem" (Lecture No. 5, p. 5). In order to give a clearer idea of this aspect, he referred once again to Argentina, although without naming it directly. "There are countries", he said, "which have tried to take the industrial impulse a very long way. As a result of this, the country has needed increasing amounts of raw materials and capital goods on the one hand, while on the other hand agriculture has been neglected, there have been big investments in industry and public works, but it has not been borne in mind that capital goods and raw materials were obtainable mainly through exports. That aspect was overlooked, and agriculture was given neither the incentives nor the machinery needed to maintain and increase its volume of production". "Thus", he went on, "there comes a moment when the country cannot continue to progress in the industrial field because it does not have the resources to do so. It does not have external resources because agriculture has been neglected and has been given neither incentives nor means of capitalization which will enable it to produce the same or a larger amount than before with fewer workers". He concluded this section by noting "so you

have here another case where the lack of a programme that takes due account of the different aspects of the economy has led a country into a dead end, seriously prejudicing the development of its economy" (Lecture No. 5, pp. 6-7).

Later on, Prebisch showed how it was necessary to start from a suitable diagnostic study in formulating an economic development programme. From that starting point, after having identified the key problems, it was necessary to find ways of solving them through the technical means and financial resources available for making the necessary investments.¹⁶ It would then be necessary to prepare a list of priorities for the efficient and effective allocation of those resources and means. Latin America's lack of this "list and order of priorities", which could only be provided through planning, thus represented one of the most serious limitations on the development process.¹⁷

After this reasoning, Prebisch indicated what the role of agriculture should be in a programme. To begin with, he asked himself: "First of all, is it possible or desirable to prepare an agricultural programme without taking into account the main lines of a general economic programme? I think that would be a serious error. If this were done, it might be possible to solve one or another partial problem of agriculture, but if what is desired is to stimulate agriculture as a whole and cause it to meet certain objectives, I maintain that the objectives of an agricultural programme could not be defined independently of the objectives of a general economic programme. Why? Because they could turn out to be incompatible, since certain agricultural objectives depend on the fulfillment of other general economic objectives". "Indeed", he continued, "we often see that agricultural plans are aimed at encouraging the production of certain crops for import sub-

¹⁶ "This task of comparing and confronting ideas, this need to establish an order of priorities, has not been satisfied. We have been tackling each of the different aspects of our problems individually, in the light of our own experience, but without any overall view" (Lecture No. 5, p. 8).

¹⁷ "I do not think we could find many examples at present of Latin American countries which have managed, through a systematic effort by their responsible economists, to prepare this table which is indispensable as the starting point for a programme" (Lecture No. 5, p. 9).

stitution purposes. But how is it possible to determine whether such substitution is advisable in agriculture without knowing whether there are other substitution possibilities in industry which are more economical and more desirable for the country?" (Lecture No. 5, p. 11). In that respect he mentioned the example of Mexico, which, he considered, had come to the conclusion that it was advisable to increase its exports of primary commodities in order to pay for its import needs.

Finally, Prebisch gave some words of warning about certain aspects which worried him with

regard to the way the development process was proceeding in the countries of the region; some contradictions in policy matters; and some forms of luxury consumption which he considered to be incompatible with development, stressing the importance of the role of the tax system in that respect. In that connection, he coincided with the view expressed in the Report of the Currie Mission that land should be taxed according to its production capacity so that "high-productivity land which is badly cultivated should pay a tax" of such a level as to lead the owner to sell it or cultivate it much better (Lecture No. 5, p. 15).

Celso Furtado: Doctor Honoris Causa

*Wilson Cano**

This ceremony, at which Dr. Celso Furtado is being invested with the title of Doctor Honoris Causa, is above all an act of justice.

Today, we are honouring an outstanding citizen who has been the Master of all of us here.

Born and brought up in the sorely tried Northeast of Brazil, Celso Furtado was familiar since his earliest youth with the realities of human life in such an underdeveloped region.

With tenacious application, at the age of 24 he went on to study law in Rio de Janeiro, and at 28 he fulfilled the tremendous challenge of gaining his Doctorate in Economics in Paris, where he conceived the basic principles of the economics of underdevelopment. Living in a European society, he was able to contrast its level of development with the misery he had known and began to gain a better perception of the political, economic and social obstacles standing in the way of progress towards economic and social development.

At 29, he entered the United Nations Economic Commission for Latin America as an economist, subsequently assuming the important post of Director of the Economic Development Division. There, together with Noyola, Ahumada, Sunkel and later Aníbal Pinto, under the leadership of the fondly remembered Prebisch, he played a major part in the formulation of the basic ideas of the ECLAC school of economic thought. In this period he was able to consolidate his theoretical and practical knowledge of the historical process of economic underdevelopment.

Since then, Furtado has become one of the main exponents of the theory of underdevelopment and a leading researcher in the economic history of Latin America, and especially of Brazil.

The integrity of his character, his sense of commitment to the struggle against poverty, his humanistic background and his sense of his public responsibilities led him to occupy high public posts, among which mention must be made of the following:

- Chairman (1953-1955) of the ECLAC/BNDE Study Group which produced the basic ideas for the famous *Plano de Metas* of Juscelino Kubitschek;
- Director (1958-1959) of the National Economic Development Bank (BNDE);
- Founder and first Superintendent (1960-1964) of Superintendency for the Economic Development of the Northeast (SUDENE);
- Minister of Planning in the administration of President João Goulart (1962/1963).

The violent military coup of April 1964, which deprived him of his civil rights, caused his withdrawal from Brazilian public life for many years. With the return of democracy, however, he came back to assume the posts of:

- Ambassador of Brazil to the European Economic Community (1985/1986).
- Minister of Culture (1986/1988) in the Sarney administration.

His academic life has been no less brilliant, including as it does distinguished periods in the Universities of Yale and Columbia (U.S.A), Cambridge (U.K.) and the Sorbonne (France).

As a writer, his extensive production includes innumerable articles published in Brazil and abroad and no less than 27 published books, ten of which were translated into various foreign languages. Special mention must be made, *inter alia*, of his classic works *Formação*

* Brazilian economist: Professor of Brazilian Economics and Co-ordinator of the Research Committee of the Institute of Economics of the University of Campinas (UNICAMP).

Address delivered at the ceremony at which Celso Furtado was declared Doctor Honoris Causa of the University of Campinas, 21 August 1990.

Econômica do Brasil and *Desenvolvimento e Subdesenvolvimento*, published between 1959 and 1961 and adopted as text books for almost all the economics and social science courses of the country, as well as his more recent works *A Fantasia Organizada* (1985) and *A Fantasia Desfeita* (1989), the latter of which reflects his frustration at the economic and political crisis of his country.

His masterpiece, however, was *Formação Econômica do Brasil*, a pioneering analysis of our economic history which was the subject of various essays commemorating the thirtieth anniversary of its publication*. The fact that it has been translated into English, French, Italian, Spanish, Japanese, German and Polish is evidence of its great value and the worldwide interest it aroused.

In this connection, there is an amusing anecdote, which the author recounts in his *Fantasia Organizada*, regarding the nasty shock he received when he was informed of the loss of the original manuscripts of his future book towards the end of the 1950s. When he went to look for them in Brazil, he found them in a warehouse of the postal service, where they were being held as suspicious material..

Desenvolvimento e Subdesenvolvimento, also one of his most outstanding works, forms an obligatory part of any bibliography on the theory of economic development and has also been translated into English, French, Spanish and Persian.

A great deal of space and time would be needed to give a more complete picture of Furtado's work and his main contributions to economic thinking.

Part of what is presented here was taken from the author's own recent essay entitled *Entre Inconformismo e Reformismo*, while part of it comes from the contact I have had and continue to have with various of his works.

There is no need to recall that Furtado was one of the main creators of the theory of economic development. He made a large number of contributions in this field, and the following is a brief summary of some of them,

He was a pioneer among us in understanding the *industrialization process in its broadest sense* as a process involving the general transformation of society—not just industrial activities proper—both in its productive and technical aspects and also in the political, social and cultural fields.

His rediscovery of the concept of the *social surplus* caused him to see economic development not as a process of quantitative expansion of the economy, but rather as one of qualitative transformation of society and development of the "productive forces".

I would also like to recall his critical comments on the lectures given in Brazil in 1951 by Professor R. Nurkse, when the latter commented on the limitations of market size with regard to the greater use of capital and concluded that economic progress is not a spontaneous or automatic event and automatic stagnation could be assimilated to the "circular flow" of Schumpeter. In 1954, and also, later, in *Desenvolvimento e Subdesenvolvimento*, Furtado heavily criticized Schumpeter, demonstrating *inter alia* the false universality of his theory, in which it was claimed that "the entrepreneur is a phenomenon found in all social organizations, from socialist to tribal forms", which implied isolating the entrepreneur from the world in which he lives. Finally, he demonstrated that, despite the importance of Schumpeter's theory of innovation, understanding the advance of technology demands an explanation of the process of capital accumulation: that is to say, a historical explanation.

His main historico-theoretical reflections, especially in the 1950s, led Furtado and his main contemporaries of ECLAC to lay the foundations of *ECLAC structuralism*, taking up once again the analytical tradition of marxist thinking through the examination of social structures

* See the articles commemorating 30 years of economic training in Brazil, by Guido Mantega and Ricardo Bielschowsky, published in *Revista de Economia Política*, Vol. 9, No. 4, October-December 1989.

and, hence, the use of non-economic parameters in macroeconomic analyses. The agrarian structure, the social structure, the structure of distribution, the theory of dependence and the structuralist approach to inflation were the main theoretical, economic and social fruits of the ECLAC thinking in which Furtado had a decisive influence.

The summary I have just made of his main reflections highlights three major conclusions on the process of Latin American economic development which are still totally valid today:

i) The need to abandon the criterion of static comparative advantages as a basis for insertion into the international division of labour.

ii) The need to make planning an established practice.

iii) The need to strengthen the role of society at large.

The total failure of the attempts to reinstall a liberal economy in Latin America immediately after the Second World War provide ample proof of the first assertion. The chaotic situation into which most of the Latin American States declined fully proves the second assertion, while the authoritarian trends of the last 30 years confirm the third one.

His profound knowledge of economic history and his concern with the history and destiny of Latin America very soon caused him to understand that, from the maturity of the first Industrial Revolution onwards, the process of capitalist development shaped a certain international division of labour—the formation of an underdeveloped periphery—with the clear objective of appropriating part of the surplus generated there and, as a result, bringing about a concentrated, antisocial and antidemocratic form of domestic appropriation of part of the surplus.

Although a tireless fighter for the economic development of the periphery, he suffered the disappointment of finally having to acknowledge the virtual impossibility of extending the patterns of income and consumption observed in the developed countries to all the population strata of the underdeveloped nations. He came to this conclusion in his critical appraisal of the forecasts of disaster contained in *The Limits to Growth* published in 1972 by the Club of Rome. This reflection is to be found in his classic work *O Mito do Desenvolvimento Econômico*, published in 1974.

With regard to the industrialization of Brazil, once again he was a pioneer in viewing it as a process which began with the recovery from the “crisis of '29”, thus differentiating it from the previous period, which he called “export-led industrialization”.

With regard to the first phase in the Brazilian industrialization process (limited industrialization), some other contributions made by Furtado may be recalled:

i) His classic and pioneering interpretation of “Keynesian policies”—adopted by Vargas before Keynes himself had conceived his anti-cyclical policies—which set forth economic policy mechanisms to defend the levels of income and employment (1930-1933). The main structure of this analysis still stands today, in spite of the scanty empirical basis used at the time. The ideological attempts made to discredit him during his exile were a failure because of various works by other leading economists who reaffirmed the pioneering nature, correctness and continued validity of Furtado’s analyses.

ii) With his skill and his theoretical strength, he managed to systematize more effectively than Roberto Simonsen the theoretical and political arguments in favour of the industrialization of Brazil, definitively overthrowing the old and outworn arguments put forward by the more conservative currents of opinion in the country in the 1950s, whose principal representative and opponent of Roberto Simonsen—Eugênio Gudín—had the ideological effrontery to assert in his work “O caso das Nações Subdesenvolvidas” that economic development (and hence industrialization) depended on the climate and was more attainable in non-tropical countries...

However, a list of Furtado’s merits should not merely reflect partial dimensions of his full and prolific life. His gifts must be set forth in all their variety: his familiarity with history; his interdisciplinary approach; the strictness of his economic analysis; his wide-

ranging theoretical understanding, and his commitment to politics. Above all, however, it is necessary to stress the humanistic dimension of Furtado and his constant search for the truth. Furthermore, we must recall his long-standing and unfailing commitment to *democracy*: an ideal ever present in all his writings and speeches.

In conclusion, may I call Professor Celso Furtado our MAESTRO: a word which we understand more in its content than in its form and take to mean someone who is a true teacher and creates veritable disciples.

It is my earnest hope that our younger economists will take advantage of his teachings: in order better to understand the problems of our heterogeneous society; in order that they may have the humility to realize how little we really know about the past; in order to cure the severe indigestion brought on by the last ten years of monetarism, debt, deficits and short-term problems; and in order never to fall back into neo-structuralist and neo-Schumpeterian pitfalls.

Finally, may they thus remember at all times that "investments, propensities and demand are mere abstract definitions" and that economics is a social science practiced by and for human beings.

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