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Notes and explanation of symbols

The following symbols are used in tables in the Review:

(...)	Three dots indicate that data are not available or are not separately reported.
(—)	A dash indicates that the amount is nil or negligible.
	A blank space in a table means that the item in question is not applicable.
(-)	A minus sign indicates a deficit or decrease, unless otherwise specified.
(.)	A point is used to indicate decimals.
(/)	A slash indicates a crop year or fiscal year, e.g., 1970/1971.
(-)	Use of a hyphen between years, e.g., 1971-1973, indicates reference to the complete number of calendar years involved, including the beginning and end years.

References to "tons" mean metric tons, and to "dollars", United States dollars, unless otherwise stated. Unless otherwise stated, references to annual rates of growth or variation signify compound annual rates. Individual figures and percentages in tables do not necessarily add up to the corresponding totals, because of rounding.

Guidelines for contributors to *CEPAL Review*

The editorial board of the Review are always interested in encouraging the publication of articles which analyse the economic and social development of Latin America and the Caribbean. With this in mind, and in order to facilitate the presentation, consideration and publication of papers, they have prepared the following information and suggestions to serve as a guide to future contributors.

—The submission of an article assumes an undertaking by the author not to submit it simultaneously to other periodical publications.

—Papers should be submitted in Spanish, English, French or Portuguese. They will be translated into the appropriate language by ECLAC.

—Papers should not be longer than 10 000 words, including notes and bibliography, if applicable, but shorter articles will also be considered. The original and one copy should be submitted, as should the diskettes, if any (in IBM compatible Word-Perfect 5.1 format).

—All contributions should be accompanied by a note clearly indicating the title of the paper, the name of the author, the institution he belongs to, and his address. Authors are also requested to send in a short summary of the article (no more than 250 words) giving a brief description of its subject matter and main conclusions.

—Footnotes should be kept to the minimum, as should the number of tables and figures, which should not duplicate information given in the text.

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Development thinking *and policies:* the way ahead

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This article takes a long-term view of the evolution of development thinking and policies in Latin America and the Caribbean. It begins by looking at the changes in policy formulation trends, noting that the most abrupt changes of this type occurred, first during the period between the wars, and second, in the early 1980s, and although in both cases changes took place which may be considered as swings of the pendulum or phases in a larger picture, they were nevertheless significant. The author then reviews the economic reforms implemented from the 1980s onwards and highlights their common factors, although these cannot be said to belong to a set paradigm, because of the markedly different ways they were applied in the different countries. He then points to some lessons that may be drawn from the economic and social results achieved, notably the insufficient level of equity obtained and the fact that while "correct" prices are very necessary, they are not of themselves sufficient to ensure development. He highlights the combination of orthodoxy and heterodoxy which has characterized the East Asian development experience, and finally details various implications which the present trends may have for the future of the region: especially the need to combine stable and coherent macroeconomic management with new forms of action at the microeconomic and mesoeconomic levels.

I

Introduction

Analysing the ways in which development thinking and policies have evolved over time in Latin America and the Caribbean, the effects that those policies have had in recent times, the lessons that can be learned from these events and –as if these questions were not already enough– the predictions that can be made regarding the course of development thinking and policies for the future is, to say the least, a tall order.

In the first place, there seems to be something of a Manichæan bias in the way development economics is approached in Latin America: the debate alternates between seemingly incompatible inward-led growth vs. export-led strategies; *laissez-faire* vs. *dirigisme*; structuralism vs. monetarism. In fact, reality defies such neat characterizations: rather than being able to settle on a single paradigm, the issues usually cover a whole spectrum of policies and strategies.

The same may be said of trying to establish cause-and-effect relationships. At times, economic performance is perceived in terms of factors originating exclusively in the international economy; conversely, in other cases the analysis is narrowed down to the results of domestic policy-making. The real world, of course, is more complicated, and the characteristics of policy-making as well as cause-and-effect relationships must inevitably be presented in different shades of gray, rather than in black or white.

II

Trends and shifts in policy-making

It appears that economic thinking is subject to something akin to the cycles that affect economic performance. The equivalent of the Kondratieff waves –the

□ This article embodies the main elements of the author's presentation at the Conference on Development Thinking and Practice (Washington, D.C., 3-5 September 1996) organized by the Inter-American Development Bank (IDB).

Secondly, we must not leave out the usual *caveat*: Latin America is made up of many widely differing countries. Neither the modalities of the 1950s nor those of the 1980s were applied uniformly: some countries embraced each model earlier –and more fervently– than others, and marked differences in policy-making are to be seen as regards the pacing, sequencing, and mixing of different measures. Furthermore, similar policies in different countries have led to disparate results, precisely because each context is different. It is always risky, therefore, to try to draw universal conclusions from the enormous variety of experiences that the region has to offer.

In spite of these reservations, I have made an effort to stick to the broad questions noted earlier, with the aim of helping to highlight some issues and introduce some parameters that may clarify the debate regarding differences in economic and social policy-making over time within Latin America, and also in comparison with other developing regions. I have accordingly divided my presentation into five necessarily brief parts. The first of these (section II) examines the shifts in policy-making over time; section III concentrates on the economic reforms put in place since the 1980s; section IV tries to garner some lessons from the economic and social performance observed to date, in so far as it is linked to the reforms; section V briefly compares the East Asian and Latin American experience, and the final section (section VI) probes the future.

long cycles– reflects the theoretical trends prevailing at a given time regarding the related issues of the economic role of Government (from Adam Smith's *The Wealth of Nations* to Keynes's *The end of Laissez-Faire*) and the degree of "openness" to international trade. The shorter cycles are presumably shaped by excesses in the application of the policy

actions that arise from the world of ideas. In other words, ideas shape action, and action then retro-shapes ideas.

In the case of Latin America, the region certainly has experienced these cycles over the past 80 years or so, both in the realm of economic thinking and in the domain of economic action. There have been at least two abrupt shifts: the first between the inter-war period and the post-war period, in response to the Great Depression and the effects of the Second World War; the second in the 1980s, in response to the debt crisis and globalization (some authors would identify a third shift in the mid-1970s, at least in the Southern Cone, but more on that later). In each case there was ongoing evolution, both conceptually and in practice.

This continuous change, which some like to view as a pendular movement but others describe as "stages" (Birdsall and Lozada, 1996), reflects a combination of universal trends and more parochial responses to both external shocks and domestic events. Further, when examining these dynamics it is hard to discern whether economic thinking and policy actions preceded economic performance, or whether economic thinking was rather shaped by economic realities; in fact, of course, both phenomena are going on simultaneously.

The first major shift in question took place in the 1930s and 1940s: a period in which the majority of the countries of the region abandoned orthodoxy and embraced industrialization based on import substitution, with its attendant interventionist policies. The economic realities that drove this change stemmed from the 1930s crisis, as countries started to tackle the deep depression and attendant foreign exchange constraints by restricting imports and promoting domestic alternatives. Even when the foreign exchange shortage was alleviated thanks to the accumulation of reserves during the Second World War the difficulty of obtaining manufactured goods on international markets kept import substitution in place, especially in the larger countries.

As is well known, the conceptual framework for this trend came, at least in part, from the Economic Commission for Latin America, led by Raúl Prebisch, which developed a persuasive argument in favor of industrialization and a strong State presence, based on the asymmetrical relations between the "centre" and the "periphery" (ECLAC, 1951). This

theory emphasized the structural impediments to development: i.e., it was almost the antithesis of the "magic of the market". The time-frame of the approach was medium and long term; little importance was attached to short-term economic policy-making, especially in the sphere of monetary, exchange and fiscal policy.

Although Prebisch himself warned of the dangers of excessive protection, over the years the ECLAC "message" became rather stereotyped and was accused of being excessively inward-oriented and *dirigiste*. Indeed, powerful pressure groups developed in the region (exemplified by the Chambers of Industry and trade unions) which were in favour of keeping protection in place and even enhancing it, thus generating a self-perpetuating dynamic which other pressure groups (exemplified by the Chambers of Commerce and of Agriculture) were unable to mitigate. It may therefore be argued that the import substitution strategy was maintained much longer than circumstances warranted. Furthermore, the region's economic performance in the 1950s and 1960s, at least in terms of growth, was more than respectable: average real per capita GDP nearly doubled between 1950 and 1970.

It is thus not surprising that the voices of opposition to ECLAC's approach during the 1950s—which came from Latin American academic circles (for notable examples, see Viner, 1953 and Corden, 1966) and also from the Bretton Woods institutions—were at first muted but then gathered momentum in the 1960s, giving rise to serious questioning from both sides of the ideological spectrum. The supporters of dependency theory (the *dependentistas*) implicitly called for more State intervention and less dependence on trade and capital flows, while the more conservative school of thought called for less State intervention and more orthodox economics. Furthermore, import substitution industrialization ran into trouble in the real world, given its anti-export, anti-rural biases and the fact that it was found that the model actually increased external vulnerability, rather than mitigating it.

At the same time, a shift in economic thinking was taking place in the world surrounding Latin America, and it naturally influenced the debate within the region. Although the question of "openness" to international trade was not at the centre of the debate, mainstream post-Keynesian economics was being attacked both from the conservative flank (the Chicago

School, with its libertarianism) and the progressive one (the so-called radical economists). Even so, the "inward-looking" model remained in being in Latin America for the next decade or so, thanks to: i) the expansion of domestic markets through formal economic integration arrangements; ii) mitigation of the anti-export bias of policy-making through selective policies (especially fiscal incentives) designed to promote non-traditional exports, and iii) greater access to international financing, especially from public sources in the 1960s and private ones in the 1970s.

The most abrupt reversal of this situation took place in the mid-1970s, and it was limited at first to the Southern Cone countries (Argentina, Chile and Uruguay). All three of these nations suffered severe macroeconomic disequilibria and price distortions; all were ruled by authoritarian military regimes, and all of them returned to what one author calls "neo-conservative economics" (Ramos, 1986) and another labels "international monetarism" (Fishlow, 1985). As Fishlow points out, "the objective of the initial application was to reduce domestic inflation. The way to do so was by a pre-specified, decreasing adjustment of the exchange rate, using the law of one price. The way to keep inflation down, once it had fallen, was by a fixed exchange rate. Free trade and capital movements would both facilitate stabilization and guarantee development" (p. 135).

Other features of the Southern Cone approach, however, were harbingers of things to come in the 1980s (Corbo, 1988): liberalization of trade and of domestic financial markets, opening up to international capital flows, deregulation, reduction of the fiscal deficit (less in Argentina than in the other countries), and restrictive monetary policies. In general, free prices were restored as the central mechanism for the efficient allocation of resources, although as Albert Fishlow correctly points out, "international monetarism did not work as advertised," owing to three important limitations: "application to the short-term of long-run equilibrium conditions; inadequate attention to the components of the balance of payments and concern only for a bottom-line total; and a focus on macro-economic equilibrium rather than on economic development" (pp. 136-137). In effect, overvalued exchange rates and excessive short-term capital inflows, as well as insufficient at-

ention to the supply side of the economies, led to a profound recession and an insolvent banking system.

All this represented a crucial break with the past strategy of all three countries; according to Fishlow, correcting the obvious flaws of the new approach meant building on some of the new foundations, rather than returning to the old ones (although there was some tension between proponents of each of these options).¹ The debt crisis of 1982 led to a major shift in economic thinking and policy-making, not only through the force of circumstances, but also because the new and acute balance of payments crises highlighted the flaws and weaknesses of the previous strategy (its vulnerability to international crises, a tendency to price distortions and lack of international competitiveness), which had been gradually accumulating over the years.

At first, adjustment and stabilization were approached in a disorderly manner, and at an extremely high social cost. A curious mixture of controls and liberalization, of orthodox and heterodox approaches, can be found in the first half of the 1980s. Much was made of the "heterodox" adjustment programmes of Argentina, Brazil and Peru, which sought to control inflation without falling into recession by guiding expectations through price and income controls in the short run, combined with liberalization of markets in the medium term. Contrary to the Israeli experience during the same period, however, all of these programmes ultimately failed, although each one for somewhat different reasons (Bruno and others, 1988).² But there was also a learning process going on, and a gradual convergence on the main parameters of a new approach, which undoubtedly represents a return in the direction of greater orthodoxy.

¹ This tension was also reflected within the ECLAC Secretariat at the time, with proponents of both strategies engaged in a lively debate.

² Bolivia is also considered by some to be a successful example of heterodox stabilization. However, at the levels of inflation being experienced by Bolivia at the time (1985), orthodoxy and heterodoxy tend to merge in terms of policy responses (Morales and Sachs, 1988). A more contemporary effort at such a heterodox approach, but with greater fiscal control, was Brazil's *Plano Real*.

III

Recent reforms

The above-mentioned convergence may be observed in several key areas of policy-making, which display a conspicuous tendency towards trade liberalization, greater confidence in market forces as the prime allocator of resources, less "interventionist" public policies, and greater coherence in macroeconomic policy-making. In other words, just as the crisis of the 1930s gave rise to import substitution and greater public sector intervention, the crisis of the 1980s ushered in a move towards more open, market-oriented economies.

Some authors have interpreted this shift in economic thinking as the emergence of a new paradigm, which the Latin American media often call "neoliberal". More modestly, some years ago John Williamson referred to this framework of policy-making as "the Washington Consensus" (although it was not conceived in Washington and does not reflect a consensus; John Williamson himself tells us he has come to regret the term). This approach is reflected in some key reforms affecting policies and markets, and pursues the twin objectives of macroeconomic stabilization and the development of international competitiveness.

More specifically, despite differences of degree and emphasis, the elements common to the approach include the following: i) explicit measures to liberalize trade, characterized by the elimination of quantitative restrictions and the establishment of moderate tariffs and narrow spreads (or, even better, a uniform low tariff); ii) fiscal discipline (reduction of the fiscal deficit or even achievement of a surplus), along with the redirecting and prioritization of public expenditures; iii) tax reform (broadening of the tax base, improvement of administrative procedures, abolition of special exemptions); iv) monetary discipline, including moderate but positive real interest rates; v) financial liberalization, with gradual abolition of preferential interest rates for privileged borrowers; vi) privatization of most State enterprises and deregulation to eliminate all regulations that restrict com-

petition (except in the case of natural monopolies or other exceptional situations); vii) deregulation of the financial and labour markets; viii) elimination of barriers to the entry of direct foreign investment, and ix) a legal and institutional framework that strengthens property rights (Williamson, 1990).

More recently, some observers mention a "second generation" of reforms, which include the creation of independent central banks, the imposition of budgetary constraints on State, provincial and local governments; establishment of a modern and effective national civil service; improvement of citizen's security, and reform of the judiciary (Edwards, 1996).

Just as important as the above characterization, however, is what the approach does *not* include: the overwhelming importance attached to market signals as the basis for resource allocation resulted in the virtual disappearance of selective incentives, investment promotion schemes and, above all, industrial policy measures. Indeed, some would argue that the approach is a stabilization tool, not a development strategy. At all events, not only did policymakers dwell on short-term policy-making, but they implicitly accepted the notion that firms would somehow adapt to the new regulatory framework and to macroeconomic incentives, eventually acquiring international competitiveness through the "magic of the market".

Furthermore, this characterization can hardly be described as a paradigm, for there are marked differences in the manner in which each country approaches the practical application of the different elements, their specific content, and the pace, scope and sequence of their implementation and the overall mix of policies used (the "menu").

Three eloquent examples can be cited. First, in the realm of exchange rate policies, where although all the countries share the goals of unifying their exchange rates and keeping them stable and competitive, they have adopted differing approaches, which vary from a relatively free floating exchange rate

(within limits), a “dirty” float, and a pre-fixed and controlled float, to a fixed exchange rate.³ Second, in the various features of the region’s anti-inflation programmes, which vary mainly with regard to the pace of implementation, and whether the conventional monetary and fiscal restrictions are accompanied by price and income policies designed to influence the expectations of economic agents. Thus, one finds gradual programmes, accompanied by price indexing, but also radical shock programmes. The third example is to be found in the liberalization of the capital account: a process that in some countries is applied simultaneously with the liberalization of the current account, while in others it is applied sequentially (French-Davis, Titelman and Uthoff, 1994).

Among the many other areas of differentiation to be found in policy-making, the following can be mentioned: i) actions designed to counteract the regressive effects of economic policy (targeting of public expenditure, transfers); ii) actions aimed at promoting specific productive activities; iii) the political will to privatize public enterprises, especially those engaged in the exploitation of mineral resources for export (oil in Mexico, copper in Chile); iv) the means used to regulate monopolies of privatized public services; v) adaptation of the legal and institutional framework governing property rights; vi) adoption of legal norms consistent with the goal of fiscal and monetary discipline; vii) incorporation of the goals of social equity and allocative efficiency into tax reform processes; viii) the content and scope of social security, welfare and labour law reforms; and ix) in general, the relative contribution of the public sector to the gross domestic product, which varies from as little as 10% to as much as 30% between the different countries.

³ But in no country has the market been allowed to freely set the exchange rate without selective interventions on the part of the Central Bank, even where future markets for the corresponding currency exist.

These distinguishing characteristics, combined with the different political outlooks of the governing teams, the changing traits of the political systems, and the different degrees of economic and technological maturity of the productive systems in the various countries, explain not only the varying pace and content of the reforms, but also the differing results achieved.

In short, the most significant institutional reforms carried out by most countries of the region represent a major shift in policy-making and in the level and scope of State intervention in the economy. This change accelerated and shaped the transformation of the development pattern that was already on the horizon prior to the debt crisis. The shift includes a move from import substitution and public investment towards exports and private investment as the main engines of growth. However, the manner in which this general thrust has been implemented has varied greatly from one country to another.

The last aspect of policy-making in the 1980s to which I should like to refer concerns formal economic integration arrangements. As is well known, several free trade or common market agreements were signed in the 1950s and 1960s. These were all highly functional to import-substitution industrialization, and when the latter strategy came under attack so too did the integration agreements. During the first half of the 1980s, these agreements virtually disappeared from the regional scene, only to be reborn a few years later in a new guise: a second generation of agreements, more compatible with export-oriented strategies, which are the types of agreement that have been adopted in the last ten years or so. This form of “open regionalism” (ECLAC, 1994) gained momentum in the 1990s and has even opened up the possibility of hemispheric integration with the signing of the North American Free Trade Agreement between Canada, Mexico and the United States, and the subsequent commitment assumed by the Heads of State and Government to create a “Free Trade Area of the Americas” beginning in the year 2005.

IV

Some lessons from the recent reforms

Which major economic and social problems have been successfully tackled by the policies of the 1980s, and what lessons have we learned? Despite the difficulty of establishing causal relationships between ideas and action, between policies and performance, there are indeed some salient characteristics of the 1990s, and some lessons to be learned (ECLAC, 1996a and 1996b).

With regard to the results obtained, the shift to a more market-oriented approach and the greater coherence and stability shown in macroeconomic management, especially in the fiscal and monetary spheres, have undoubtedly played a major role in bringing inflation under control. During the second half of the 1980s, several countries (Argentina, Bolivia, Brazil, Peru, Nicaragua) were afflicted with hyperinflation; indeed, the weighted average yearly inflation for the region was of the order of 1,000% in 1988, 1989 and 1990. By 1995, however, the weighted average yearly inflation was 25%, and about half of the countries had either reached single-digit inflation or were close to achieving it. There can be no doubt that this progress is due to the stabilization policies which affected both the expectations of economic agents and aggregate demand.

Moreover, by the early 1990s most of the countries of the region had recovered the capacity to grow, albeit at moderate rates. Some countries grew rapidly for one or two years, but then faced the need to adjust; only Chile has been able to sustain high growth rates for an extended period of time. The fact that growth was not more dynamic partly reflects the trade-offs between policies designed to maintain stability and those aimed at promoting growth: an issue that continues to elicit a lively debate (Dornbusch and Werner, 1994).

Another expression of possible trade-offs between growth and stability is what happened in the external sector, as the region moved from current account surpluses to growing deficits. The pattern of moderate growth with increasing price stability was aided, from 1991 onwards, by a heavy inflow of international capital attracted partly by high interest rates and partly by the confidence inspired by improved macroeconomic management, progress in struc-

tural reforms and the consolidation of democratic political regimes. This is quite a notable achievement when one recalls the long period of net financial outflows that characterized the region only a few years ago.

The magnitude of capital inflows in the period 1993-1994 was such that, in many countries, they contributed to exchange rate appreciation and obliged the monetary authorities to push interest rates even higher. This syndrome, combined with faulty domestic policies, was one of the underlying causes of the Mexican financial crisis of December 1994 (Sachs, Tornell and Velasco, 1995), and was a reminder to policy makers that the maintenance of macroeconomic equilibria is an ongoing challenge. In other words, the conditions under which the economies are evolving leave them vulnerable. In many cases, macroeconomic stability has been achieved at the cost of large balance-of-payments current account deficits, financed at times with volatile capital likely to withdraw at the first sight of any circumstance that dampens investor confidence.

To make matters worse, the considerable level of external saving was not being channeled to increased investment: instead, a significant proportion was fuelling the consumption of imported goods. The ratio of national saving to GDP had been growing very sluggishly, and the total investment/GDP ratio is far below the levels obtaining before the debt crisis. In the specific case of Mexico, for example, while external saving increased from 3.6% to 7.0% of GDP between 1990-1991 and 1993-1994, national saving decreased from 18.5% to 15.6% over the same period (ECLAC, 1996b, p. 53).

Another manifestation of the continued vulnerability, in spite of the progress achieved, is to be found in two structural dimensions. One is the weakness of the financial systems in some countries, frequently compounded by the shortcomings of the regulatory agencies: a number of financial crises affecting large banking institutions have required rescue operations at a high fiscal cost. The second dimension refers to fiscal stability, since the progress achieved so far has proved to rest on somewhat fragile foundations: in

both Argentina and Mexico, the economic contraction of 1995 was accompanied by a disproportionate fall in fiscal revenues, forcing both Governments to raise tax rates.

But perhaps the most glaring insufficiency of economic performance in the past few years—related, to be sure, to modest growth rates—has been in the realm of equity. Although the incidence of poverty has gradually fallen in most countries, the levels are still considerably higher than those observed in 1980, while income distribution has worsened in virtually all cases (Uruguay seems to be the main exception),⁴ except where there has been a rapid decline in inflation (Brazil in 1994-1995). The relatively poor results obtained in terms of equity (ECLAC, 1995) can be traced to three phenomena.

In the first place, the type of productive restructuring that resulted from the adjustments, the shifts in relative prices and the liberalization of trade have so far failed to generate enough job opportunities to absorb new entrants into the economically active population. In the current phase of moderate growth, the number of productive job opportunities has increased very slowly, while the wage differential between jobs requiring different levels of training has tended to widen.

In the second place, the public policies adopted so far in order to alleviate the most serious manifestations of deprivation and marginalization have not had sufficient resources to achieve their aims, and they have been of only limited efficacy; social spending has been constrained by efforts at budgetary discipline, and social policy management has not progressed with the necessary speed and effectiveness.

Lastly, although the final verdict is far from definitive, and there is considerable debate going on regarding this matter (Scobie, 1990; Taylor, 1988), there are indications that—except in countries which drastically reduced their inflation rates—policy-making has had a regressive bias, given the initial effects of the adjustment on real wages, real interest rates, levels of employment and public expenditure.

The worsening patterns of equity have been even more noticeable at the microeconomic level, where

the processes of adjustment, macroeconomic stabilization and structural reform have acted as a powerful selection mechanism which has forced firms to adapt to the new scenarios governed by price signals and the new patterns of regulation of productive activities. It is not surprising, then, that different firms have had very varied reactions to these phenomena, depending on their type of activity, the region of the country where they are located and the system of production involved. In general, the sectors hardest hit by the changes in the rules of the game and the regulatory framework have been industries that produce for the domestic market, activities that involve relatively intensive use of engineering services, small and medium-sized firms and State enterprises in general. In contrast, sectors involved in exporting, activities based on natural resources, large domestically-owned conglomerates and many transnational corporations have been able to adapt more successfully to the changing circumstances.

Restructuring has forced the region's productive systems to revert to their traditional areas of comparative advantage (basic and industrial commodities), although in a number of cases they have been able to incorporate new technologies that have expanded access to available natural resources and modernized the methods of their exploitation. The structural heterogeneity characteristic of the region's productive systems has been accentuated, as productivity differences have tended to widen between large, world-class firms in the forefront of the modernization process and the many and varied activities that are lagging behind. This trend has been further reinforced owing to the segmentation of credit, which has practically excluded small and medium-sized firms from access to the main sources of capital. Another reflection of this phenomenon is the rapid disappearance of traditional shops due to the appearance of large American-type shopping malls run by domestic or international conglomerates. The net result has been that while both total factor productivity and labour productivity have risen rapidly in the "modern" sectors, they have been going down in the less advanced sectors, thus partly offsetting the progress made by the economy as a whole.

In short, the changes in the field of policy-making in the 1980s have not been accompanied by a really satisfactory improvement in economic performance, although it cannot be denied that substantial progress has been made compared with the disastrous

⁴ It is tempting to surmise that the reason why Uruguay has been an exception in this respect is due partly to the fact that it has not dismantled the generous social security system inherited from the Welfare State, whose continued existence is in direct contradiction to the trends of recent decades.

preceding decade. Furthermore, in theory the reform process should leave the countries much better fitted than before to cope with the challenges of globalization. However, the progress actually made possible by this process has been neither solid enough nor far-reaching enough to achieve sustained growth, financial stability and greater equity. At all events, the experience gained is helping to develop ideas and formulate policies at the economic level.

Among the most important lessons learned from this process, two linked ideas stand out. Firstly, there is the idea that a stable macroeconomic environment is an essential precondition for stimulating saving and investment and achieving higher rates of growth. In order to match effective demand with the production frontier and to cushion the effects of external shocks, the countries need mutually consistent monetary, credit, fiscal and trade policies, though these will naturally differ from one another in terms of their scope and content. They also need suitable income and wage policies, combined with policies to promote saving, investment and the development of production capacity.

However, and in the second place, excessive reliance on the "automatic" effectiveness of price sig-

nals and macroeconomic reforms has led to a tendency to underestimate the weakness of institutions, flaws in the markets (many of which are imperfect, segmented or incomplete) and the importance of externalities, and has on occasion induced overconfidence in the capacity of macroeconomic policy alone to trigger growth. Experience has shown that even the best-conceived policies can prove ineffective or fail to produce the desired effects in an adverse institutional context. The fact is that these structural problems make it difficult to achieve sustained growth solely on the basis of price signals.

Thus, the most important lesson derived from the reform process is that what is needed is *a return to orthodoxy in some respects* (an interest in ensuring that prices are "right"), *combined with a rejection of orthodoxy in other respects* (the "right" prices are necessary, but not enough in themselves). Once we recognize the interactions that exist between stabilization measures and structural reforms, it may be that the integrated consideration of macroeconomic scenarios, institutions and regulatory frameworks, factor markets and microeconomic behaviour will become a more important feature of policy-making in the future.

V

An aside: the East Asian development experience and its effects on Latin America

As an aside, it may be worth recalling that already in the 1980s the newly industrialized East Asian countries (Singapore, South Korea and Taiwan, together with Hong Kong) attracted much attention in Latin America as "success stories" that offered important lessons for the region (Fajnzylber, 1981). Indeed, both the proponents of export-oriented strategies and of strong State intervention could find models worthy of imitation in those countries. This explains the many studies prepared in recent years in order to draw practical conclusions from the success of the so-called "high-performing Asian economies", the best known of which is undoubtedly "The East Asian Miracle" (World Bank, 1993).

There are, of course, differing interpretations of the lessons to be learned from the success of the Asian economies, especially in the areas of how important their export and market orientation, or the industrial policies followed, really have been (Fishlow and others, 1994). In addition, the obsession with the "Asian tigers", and especially Korea, has probably been somewhat misdirected, given the important cultural, political, institutional and economic differences among these countries and especially between them and the Latin American nations. It should further be recalled that the shift from import substitution to export orientation in these particular countries occurred before globalization greatly reduced the

leeway for policy-making, because the world is now less tolerant than it was in those days regarding the use of gradual or selective trade liberalization mechanisms.

Still, there is much to be learned from the Asian development experience of past decades,⁵ especially in the case of the South-East Asian countries (Indonesia, Malaysia, the Philippines and Thailand), which share many common features with a number of Latin American countries, and there is clearly potential for enhanced interregional cooperation and the exchange of experience. In fact, some of the elements generally seen as accounting for the success of the high-performing Asian economies are being systematically applied in Latin America. They include the pursuit of macroeconomic stability (or, in the words of the World Bank, "getting the basics right"), recognition of the need for greater investment in human capital (although the region's efforts do not

yet match those observed in East Asia), and acknowledgement of the need to increase domestic financial saving and adopt greater export orientation. In addition, the proponents of giving industrial policy a more central role in promoting development in Latin America draw on numerous East Asian countries as their source of inspiration.

Just as in our own region, a mix of orthodoxy and heterodoxy is also plainly present in the East Asian economies. In the words of the World Bank, "fundamentally sound development policy was a major ingredient in achieving growth...but these fundamental policies do not tell the entire story. In most of these economies, in one form or another, the government intervened—systematically and through multiple channels—to foster development, and in some cases the development of specific industries". (World Bank, 1993, p. 5)

VI

Future implications of current trends

From my earlier comments it may be deduced that I am suggesting that the pendulum of development thinking has reached its furthest point in the direction of orthodoxy, and is now gradually coming back. Whether we are on the brink of a major shift comparable to the two major transformations referred to earlier or, as seems more probable, a more moderate adjustment of the prevailing trends remains to be seen. There can be no doubt, however, that the set of foreseeable changes will have far-reaching repercussions in terms of the form of growth, so that the development of the region in the second half of the 1990s will be markedly different from that observed in the first half of the decade.

What will these adjustments be like, and how will they affect future trends in economic thinking and development policies? I should now like to outline some possibilities in this respect, drawing on some of my previous points, while avoiding covering

the territory that Albert Fishlow will probably examine in his paper on "Implications and Development Perspectives for Latin America and the Caribbean".

The first idea I would like to retrieve concerns the notion that economic thinking runs in cycles. There is little reason to believe that the clear shift towards market-based reforms will evolve towards some immutable paradigm. On the contrary, some of the shortcomings of economic performance which are rightly or wrongly attributed to the implementation of market-based policies alone have already given rise to some revisionism, or at least to questioning of the current conventional wisdom, especially in respect of whether it would not be a serious exaggeration to expect that "right" prices, by themselves, would lead to sustainable growth with financial stability and ever-improving equity.

This is not to suggest a return to outmoded policies of the past, which would be incompatible with the way the international economy functions today. What I really mean to say is that it is reasonable to assume that globalization will dictate certain norms of international behaviour as regards macro-economic policy-making, and this will probably be

⁵ But this cannot be viewed as a "model": in his foreword to the 1993 World Bank study, Lewis Preston, then President of the Bank, rightly points out that "The eight economies studied used very different combinations of policies, from hands-off to highly interventionist."

all to the good, since continuity (in contrast with wild swings in policy-making) is valued as part of the image of stability that countries need to project in order to compete for international resources and markets. What is most likely to take place, however, is that first there will be a shift from emphasis on short-term macroeconomic management to medium-term development strategies, after which there may be a redefinition of the role of public policy in meeting key development objectives, such as improved productivity (at the company as well as the systemic level), environmental sustainability and improved income distribution. In short, perhaps we can look forward to that combination of orthodoxy and heterodoxy I mentioned earlier: that is to say, a combination of stable and coherent macroeconomic management with a new form of intervention at the micro- and meso-economic levels. This approach, which some authors have termed "neo-structuralism" (Fishlow, 1985; Sunkel, 1991), is fully in keeping, in general terms, with the proposals that ECLAC has been making since 1990 in its major publications.

Thus, the direction and content of policy-making in general will change once they are placed in a more clearly medium-term context. As already noted, the objective of maintaining the macroeconomic equilibrium will not be abandoned, but greater efforts will probably be made to ensure that the process of achieving stability does not distort the efficient allocation of resources required to raise the level of productivity. Macroeconomic stability is not just the maintenance of low inflation and fiscal balance but also a sustainable current account deficit, a level of domestic saving sufficient to sustain investment, a suitable real exchange rate, and a level of aggregate demand consistent with full utilization of existing production capacity. Policy makers will presumably strive for progress on all fronts at the same time, without overemphasis on any one of these goals at the expense of the others.

Firstly, the relative orthodoxy that will mark macroeconomic management will most likely be complemented with a more "activist" stance on the part of governments. This activism will be manifested in more selective policy interventions at the macroeconomic level in order to meet specific objectives of development, such as attaining international competitiveness, maintaining price stability and achieving greater social equity. In other words, public policy will not be limited to maintaining overall

macroeconomic consistency but will also place greater emphasis on production development policies. These might include, for example, supporting information networks, strengthening the mechanisms of business cooperation, protecting intellectual property, promoting research centres and extension services for the technology specific to a given sector, adopting international norms and standards, and promoting occupational training and education.

In the same vein, we can look forward to greater government intervention to mobilize national saving and channel it towards productive investment. Relying solely on the market and interest rates has not led to appropriate saving/GDP ratios and it has also hindered the attainment of better investment/GDP ratios. To attain adequate levels of saving and investment, stable macroeconomic management will need to be complemented by effective incentives and appropriate institutions. We can expect greater efforts to promote institutional saving (through reforms in the pension and tax incentive systems), to improve and deepen financial systems, to develop well-regulated and supervised financial institutions and instruments, and to help previously excluded branches of activity to gain access to investment capital.

Secondly, the clear shift that has taken place in the last decade towards greater specialization in the export of industrial and even basic commodities is a two-edged sword. On the one hand, it makes sense for the region to base its growth on the exploitation of its generous endowment of natural resources, especially since the application of technological innovations has in general improved the international competitiveness of most of these goods, so that the region has better access to the respective markets. On the other hand, however, this specialization has some similarities to the international division of labour as perceived by ECLA as far back as 1949; it would be an irony if we came back to where we started and accepted that, in the global economy, the developing countries (or at least the Latin American and Caribbean countries) should specialize in commodities subject to low demand elasticity on world markets, thus restricting us to low-productivity sectors. One of the main objectives of what we call "changing production patterns" is to move in the direction of economic activities with a higher value added and a higher growth potential: i.e., activities offering dynamic comparative advantages. Thus, the selective policy interventions alluded to earlier will probably

be aimed at developing clusters of activities around the industrial commodities that are currently among Latin America's strong points,⁶ establishing both forward and backward linkages designed to permit the production of goods with a higher degree of processing and value added.

Thirdly – to return to a point that was only briefly touched upon in my earlier comments – environmental issues will loom ever larger on the Latin American policy agenda in the years ahead. This is because growth will very probably depend to a large extent on the efficient and environmentally rational exploitation and processing of natural resources (ECLAC, 1991). Furthermore, it is already clear that the link between environmental standards and trade will become an increasingly important issue in international economic relations, and it is preferable for the countries of the region to adopt an offensive strategy rather than expose themselves to a new form of protectionism. Partly because of the impact of the 1992 United Nations Conference on Environment and Development, the old dilemma between growth and environmental protection has been practically left behind: it is now increasingly acknowledged that these two factors are not necessarily incompatible and can even be mutually supportive.

Fourthly, another aspect of policy-making which will be assuming increasing importance in the next few years will be the need to try to reconcile unilateral trade liberalization measures with formal intra-regional and even intra-hemispheric trade agreements. It is interesting to note that the boost given to regional cooperation in recent years has not adversely affected most countries' commitment to participate in the process of world trade liberalization, which has given relatively good results. However, just as regionalism can help to create a more open international economy, it can also contribute to the breaking up of the world or regional economy into blocs. Hypothetically, the new generation of trade agreements could give rise to a wide variety of situations, ranging from a region fractured into four or five subregional groupings to a hemisphere-wide free trade area. It is too early to forecast what will finally happen, though it is to be hoped that the latter possibility will prevail. At any rate, this topic will

certainly occupy an important place on the region's development agenda for the rest of this decade, and probably many years more.

Fifthly, there can be no doubt that the most important task left over from the post-war period in Latin America is that of improving equity. Given the increasing disparities between the different segments of the population, and their impact on political interaction in more pluralistic societies, this problem will surely have to be tackled more systematically. The generation of more jobs will become one of the most important public policy objectives, and this means that it will be necessary not only to achieve a better investment/GDP ratio and higher growth rates, but also to provide incentives for activities which are labour-intensive yet competitive and to promote higher productivity in general. It is also very likely that greater resources will need to be assigned to health services and, above all, education. The issue of participatory development, which has aroused more interest in Asia than in Latin America, will surely be taken up again (Ghai, 1988; Schneider, 1995). In addition, increasing importance will be given to improved means of implementing social policies, including the targetting of expenditure towards the most vulnerable segments of the population. It is even possible that, at least in some cases, there will be a revival of the old debate on the possible justification for agrarian reform, which had practically disappeared from the development agenda until recently, although it is once again in the limelight in Brazil.

Inequity has undoubtedly always been a characteristic feature of Latin American development. There are some reasons for guarded optimism that real progress can be achieved on this front, however, especially if higher growth rates are attained. These reasons are the following. First, population growth rates are declining quite substantially, and the impact of this trend on the demand for public services and on the number of entrants into the workforce will be felt in the coming years. Second, the increasing attention most countries have been giving in recent years to the quantitative and qualitative aspects of education, and the heavy investment in human capital to ensure that workers' skills keep pace with technical progress, should start to yield tangible benefits by the early years of the next century. Third, the extraordinary expansion in grassroots organizations in recent years, combined with the consolidation of democratic

⁶ Products deriving from the fishery, forestry, mining, petroleum, energy and agricultural sectors.

and participative political systems, should diversify the structure of pressure groups, currently dominated by big business.

Finally, although few in our region are in favour of a return to authoritarian government intervention or the reappearance of privileged sectors of production, the public policy agenda will clearly be broad, complex and demanding. In order for the trend towards democratization to receive all the attention it deserves, public sector reform must occupy a leading place on the development agenda, with the sole objective of providing governments with greater capacity to carry out their duties more effectively and hopefully with greater openness and responsibility than in the past. This will put an end to the debate on this subject, and orthodox approaches will continue to have supporters who mistrust *all* public intervention on principle. If we are to remain true to the idea that economic thinking moves in cycles, we should acknowledge that this may be the beginning of a new trend in policies that may bring us, possibly around the year 2020, to a situation of greater orthodoxy.

To conclude on a rather optimistic note, we might say that if these trends in development thinking and policy-making continue, most Latin American countries can look forward to improved performance in the years to come, in terms of both growth and equity. In other words, the learning pro-

cess of the 1980s and 1990s can prove to be a valuable contribution to development as the region enters the next millennium. The pragmatism currently observed in policy-making should be an important asset in this endeavour. The same can be said for the increasing creativity and entrepreneurial spirit that the region's private sector has shown in recent years. Likewise, the consolidation of economic interdependence within the region, led by a new generation of formal integration agreements, will reduce the region's vulnerability to external shocks. By the year 2000, Latin America and the Caribbean will have a population of 515 million inhabitants with middle-level per capita incomes (an average of around US\$ 3,800), and this will make it an attractive market in its own right.

To be sure, progress will not be linear, nor will it be evenly distributed, whether between countries, subnational regions, or different strata of the population. Furthermore, it will be a long time before it will be possible to put right many of the problems currently faced by the region which seem to be insoluble—urban sprawl, lack of personal security, environmental degradation, widespread poverty and deterioration of the physical infrastructure. Still, no-one can deny that on balance we are moving in the right direction.

(Original: Spanish)

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Macroeconomic *policies* for growth

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This article analyses the interrelation between the macroeconomic framework and growth. After reviewing the recent macroeconomic environment, highlighting progress and shortcomings, it focuses on the implications of the existence of gaps between production capacity and its degree of utilization or effective demand; the way in which persistent disparities in this respect affect the speed of expansion of the production frontier is illustrated by examples from the 1980s and 1990s. It then reviews economic policies that affect the degree of proximity between the production frontier and effective demand, with particular reference to the cases of anti-inflationary policies and external shocks. The article concludes with some considerations and recommendations on the quality of macroeconomic policy and "right" macroeconomic prices, especially exchange rate and interest rates, and emphasizes the need for effective measures to ensure that capital inflows enlarge productive investment.

I

Introduction

Macroeconomic balances are not objectives to be pursued for their own sake, but they are crucial for achieving more dynamic development with equity. This is why it is so important to see how these balances are obtained, how sustainable and comprehensive they are, and how compatible they are with macro-social balances.

Several Latin American countries have suffered from hyperinflation: a phenomenon which tends to occupy such a dominant place that anti-inflationary policy often becomes the leading and absolute objective of the economic programme applied. This article, however, goes beyond this situation or other catastrophic events, since what interests us in particular is the interrelation between macroeconomics and growth.

From the productive point of view, efficient macroeconomic policies must help to: i) raise the level of utilization of production capacity, labour and capital in a sustainable manner; ii) stimulate gross capital formation, and iii) increase productivity by furthering improvements in factor quality and in the

efficiency of factor allocation. These are the three cardinal elements that determine the economic growth rate. Latin American and Caribbean countries have had a poor record in this respect in recent times.

Reconciling the levels of aggregate demand and supply, attaining a suitable mix between tradables and non-tradables, and achieving appropriate macroeconomic relative prices such as interest rates and exchange rates are key variables for attaining macroeconomic policy objectives.

If these policies are to make the most effective contribution to development, it is necessary to take a comprehensive overall view in the economic dimension, which systematically takes account of their effects on productive development, which reconciles the macroeconomic and macrosocial balances in a similarly integrated manner, and which gives rise to trends which are sustainable in time. Capital formation and the effective productivity of that capital are vitally dependent on the quality of those balances.

II

The recent macroeconomic environment

1. The achievements

Latin American countries have significantly improved their macroeconomic policies, having managed to correct a number of imbalances which caused most distortions in the 1980s.

By late 1994, hyperinflation had disappeared, and many countries of the region were registering single-digit rates of inflation, with more balanced budgets and greater fiscal savings (ECLAC, 1995b, table A.6). Expansions of the money supply to finance public expenditure had become weaker or

simply disappeared. Export volumes were rising fast (average export growth in the region in the period 1990-1994 was over 7%), and many countries were building up significant international reserves (equivalent to 6.5% of the regional GDP in the three-year period 1991-1993).

Likewise, there was increasingly general recognition of the importance of achieving macroeconomic balances. However, three types of problems were arising. First, certain balances had been obtained at the expense of imbalances in some other macroeconomic variables (such as the level of utilization of installed capacity) or in mesoeconomic aspects (neglect of areas important for competitiveness and equity, such as investment in infrastructure and teachers' wages). Second, a policy which is appropriate

□ The author wishes to express his gratitude for the valuable comments of Oscar Altimir, André Hofman and Joseph Ramos, as well as for the collaboration provided by Roberto Machado.

in certain circumstances may cease to be appropriate as the situation changes, so macroeconomic policies must adapt to such changes in a gradual and timely manner. Third, despite the massive popular support generated by the solution of cases of hyperinflation and economic anarchy, failure to achieve an appropriate balance between the various objectives of society may cause broad sectors of the population to feel great dissatisfaction with the public policies being applied and their results in terms of income distribution and participation. In our view, this dissatisfaction is partly connected with shortcomings on the first two fronts.

2. Persistent or emerging imbalances

In the 1980s, currency devaluations helped fuel inflation. In the 1990s, in contrast, the success achieved in reducing inflation was partly due, in a number of cases, to exchange rate appreciation: in fact, the vast majority of the countries revalued their currencies in real terms between 1990 and 1994, by a weighted average of 24%. Renewed access to external finance made possible or actually encouraged successive real revaluations, which acted as an anchor for the domestic prices of tradable goods (table 1). At the same time, in the early 1990s many countries registered high rates of under-utilization of their productive capacity, and this, in conjunction with the renewed access to external finance and currency revaluations, helped a number of countries to increase their rates of resource use while at the same time reducing inflation.

The first revaluations started from very depreciated exchange rate levels resulting from the widespread external debt crisis of the 1980s. As time went by, however, very significant levels of exchange rate appreciation were built up, which, while they consistently helped to slow down inflation, also gave rise to growing current account deficits in the 1990s (table 2). Indeed, exchange rate appreciation contributed to the rise in the overall current account deficit of 18 countries of the region from an average of US\$ 9 billion in the period 1983-1990 to US\$ 53 billion in 1994. Together with trade liberalization (ECLAC, 1995a, chapter V), this caused the recovery in aggregate demand, both of individuals and of firms, to be increasingly concentrated in imported goods. Thus, for example, between 1990 and 1994 the regional GDP grew by 15%, whereas imports of goods and services rose by 69%.

TABLE 1

Argentina and Mexico: Evolution of relative prices^a
(1986=100)

	Argentina		Mexico
	Wholesale/ retail	Industry/ private services	Tradable goods/ non-tradable goods
1980	87.1	90.2	67.7
1981	83.3	90.5	66.4
1982	116.9	139.4	69.9
1983	126.1	143.6	81.5
1984	119.0	131.7	89.8
1985	114.6	120.0	90.1
1986	100.0	100.0	100.0
1987	94.9	99.7	116.5
1988	109.6	126.7	95.4
1989	124.3	155.1	73.2
1990	94.6	85.9	58.6
1991	67.6	61.0	55.8
1992	58.0	47.4	52.7
1993	52.5	37.0	50.3
1994	53.7	34.2	...

Source: For Argentina: prepared on the basis of data from the Central Bank of Argentina, the National Institute of Statistics and Censuses (INDEC), and Situación Latinoamericana (1996). For Mexico: prepared on the basis of data from the Ministry of Finance and Public Credit of Mexico.

^a Quotients of price indexes.

Indeed, real imports expanded on average by 15% per year between 1990 and 1994, whereas exports grew by only 7% annually. Imports thus went from a low level kept down by recession to an excessively high level, particularly in the case of consumer goods.

In the countries which went furthest in terms of appreciation, with bigger and faster-growing external deficits caused or maintained by financial flows, price stabilization processes tended to be more rapid. They also became more vulnerable, however, as the gap between domestic spending and production grew wider and external liabilities grew apace. As was to be expected, external creditors became increasingly sensitive to political and economic "bad news".

Thus, some countries suffered traumatic setbacks in the fight against inflation (Mexico, for example) or sank into recessions (Mexico, once again, and Argentina). When timely corrections were made, however, the necessary adjustments could be carried out without major upsets (as in Brazil in 1995, to some extent).

TABLE 2

Latin America (19 countries): External deficit, investment and exchange rates

Countries	Current account deficit (Millions of dollars of each year)					
	1983-1990	1991	1992	1993	1994	1995
Argentina	1 413	647	6 546	7 031	9 311	2 277
Brazil	1 554	1 443	(6 140)	592	1 689	17 784
Chile	1 101	287	1 065	2 421	1 045	270
Colombia	668	(2 363)	(925)	2 130	3 033	4 055
Mexico	592	14 995	24 919	23 496	29 514	736
Peru	932	1 649	2 143	2 092	2 605	4 197
Latin America	7 956	18 801	36 915	45 656	50 730	33 314
Latin America less Venezuela	9 653	20 670	20 670	43 663	53 180	34 864

Countries	Gross fixed capital formation (% of GDP at 1980 prices)					
	1983-1990	1991	1992	1993	1994	1995
Argentina	16.5	15.4	18.6	19.9	22.0	19.4
Brazil	16.5	14.2	13.2	13.7	14.6	15.7
Chile	15.3	17.2	19.6	21.7	21.6	22.3
Colombia	15.7	12.6	13.7	17.7	19.1	21.1
Mexico	17.1	19.6	21.1	20.7	21.7	16.3
Peru	17.6	17.3	18.0	18.8	22.4	...
Latin America ^a	16.8	16.3	17.4	18.0	18.6	17.5

Countries	Real exchange rate indexes ^b (1987-1990 = 100)					
	1983-1986	1991	1992	1993	1994	1995
Argentina	78.5	67.3	62.6	60.1	63.3	70.3
Brazil	117.2	93.2	100.5	90.8	73.1	55.5
Chile	68.8	100.1	96.6	97.9	97.8	93.6
Colombia	65.1	112.1	99.3	96.6	83.0	83.1
Mexico	96.0	81.3	74.8	71.2	73.1	108.0
Peru	136.4	54.0	53.2	54.8	55.7	56.3
Latin America ^a	97.4	87.1	86.0	81.1	74.8	76.4
Latin America (simple average)	85.8	96.4	95.0	93.7	92.1	94.7

^a The average real exchange rate for Latin America was calculated on the basis of the relative shares of the various countries' GDP in the regional total (excluding Panama). The 1995 figures exclude Haiti and Nicaragua as well as Panama.

^b Corresponds to the annual average of the real exchange rate indexes (main official rates) of each country's currency in relation to the currencies of its main trading partners, weighted by the relative importance of its exports to those countries. The weightings correspond to the average for 1989-1992. The indexes, built on consumer prices indexes, were obtained from ECLAC, Economic Survey of Latin America and the Caribbean.

During the emergency situations caused by the debt crisis, in many countries there were generalized cuts in public spending. There were cuts not only in redundant and bureaucratic expenses, but also in areas where spending was already insufficient, thus slashing expenditure which was essential for changing production patterns with social equity. In such areas as infrastructure, education and labour training, investment—whether public or private—is often far below the levels appropriate for economies undergoing major processes of reform and change.

Maintaining excessive cuts in expenditure on these essential items for many years undermines efforts to improve factor quality and impedes the full utilization of installed capacity, thus lowering the efficiency of the changes in production which are under way in the region. Thus, economies operate with less dynamic production frontiers and in positions markedly below those frontiers. That is, their production capacity is under-utilized and tends to grow more slowly because of the lower level of investment, with consequent negative impacts on effective productivity, employment and profitability.

3. Recent economic trends and necessary adjustments in macroeconomic policies

The revival of capital inflows to the region at the beginning of the 1990s provided the finance needed to take fuller advantage of the available productive capacity of each country and freed governments from the pressures of the frequent debt negotiations, which distracted attention from the task of solving more basic, structural problems. At the same time, however, it raised the challenge of ensuring the sustainability of macroeconomic balances.

Net capital inflows recovered from 1990 on, reaching an annual average of some US\$ 62 billion in 1992-1994, mainly from private sources. For the region as a whole, the renewed inflow of capital had positive Keynesian-type effects: it eliminated the binding external constraints which had prevailed before, making possible higher use of productive capacity and thus leading to a recovery in output, income and employment (and even investment, as noted later in this article). The elimination of external constraints between 1990 and 1994 aided the resumption of economic growth, which rate increased from 1.6% per year in 1983-1990 to 3.6% in 1991-1994 (table 3, line 15).

The increased availability of external savings made it possible to finance the bigger imports associated with an increase in aggregate demand and in the utilization of existing productive capacity. The expansionary effect was felt over most of the region, but was particularly marked in countries such as Argentina, Chile, Peru and Venezuela. There were some exceptions, however. Thus, although Mexico received a particularly large inflow of private capital, it did not register a substantial recovery in growth during the period in question. Towards the end of the 1980s, that country was operating close to its production frontier; investment in 1990 and 1994 was only moderate, and the exchange-rate lag led to some degree of under-utilization of its productive capacity in the tradable sector, so that this sector was able to react promptly to the 1995 recession with maxi-devaluation.

The degree in which the inflow of external funds is reflected in GDP growth is strongly determined by i) the initial gap between effective GDP and the production frontier; ii) the nature of the domestic economic policies implemented, especially the macroeconomic ones; iii) the expectations of the economic

agents; iv) political events; and v) external factors such as the behaviour of the terms of trade.

The speed with which the capital inflows eliminated external constraints and generated a surplus of funds led to a trend towards exchange rate appreciation, rapid reduction of trade surpluses and an increase in the current account deficit (ECLAC, 1995a, chapter XI); domestic spending rose more than domestic output and national income, and from 1992 onwards a trade deficit was registered at current prices, the first such deficit in the region since 1981. Initially, these trends reflected the return to "normal" levels of aggregate demand, imports and the real exchange rate, all of which had been depressed by external constraints during the previous period. However, the continued abundance of inflows prolonged these trends in time and tended to generate unsustainable imbalances, since national savings were displaced by external savings, as reflected in the fact that the growth of total investment was less than that of external savings (table 3, lines 3 and 12).

Thus, it was only in 1992 that the investment ratio rose above the average for the period 1983-1990. It must be added that only in some countries of the region, which have received large capital inflows (Chile, for example), have such inflows been accompanied by any significant increase in the investment ratio. Even so, if the period 1983-1990 is compared with 1993-1994, it may be noted that while the external savings used (net capital inflows less accumulation of reserves) rose by more than three percentage points of GDP, the investment ratio grew by less than two points.¹ The remainder was used for consumption and to make up for the deterioration in the terms of trade, together with a decline in the domestic savings coefficient (table 3, lines 11 and 14). This "imbalance" was very marked in cases like Argentina and Mexico.

In a process of this kind, it is not surprising that domestic savings are adversely affected, as indeed happened, especially in the countries with the biggest revaluations, such as Argentina and Mexico.

¹ These figures are expressed in 1980 dollars. In the new national accounts series prepared by ECLAC in 1990 dollars, the investment coefficients of most of the countries of the region are higher, although the shapes of the curves are similar. Consequently, their investment rates in both the 1980s and the 1990s continue to be well below those of the 1970s.

TABLE 3

Latin America (19 countries): Macroeconomic indicators
(In billions of dollars and as percentages of GDP)

	Billions of 1980 dollars								Percentages of GDP							
	1976-1981	1983-1990	1991-1992	1993-1994	1991	1992	1993	1994	1976-1981	1983-1990	1991-1992	1993-1994	1991	1992	1993	1994
1. Net capital inflows	32.7	9.0	41.6	45.9	31.8	51.4	56.4	35.4	4.9	1.2	4.8	4.9	3.7	5.8	6.2	3.7
2. Changes in reserves	6.6	1.3	19.4	7.8	16.2	22.5	18.6	-3.0	1.0	0.2	2.2	0.8	1.9	2.6	2.0	-0.3
3. External savings (1-2)	26.1	7.7	22.2	38.1	15.6	28.9	37.8	38.4	3.9	1.0	2.6	4.1	1.8	3.3	4.1	4.0
4. Terms-of-trade effect ^a	5.5	30.0	48.0	54.2	46.9	49.1	54.3	54.0	0.8	3.8	5.5	5.8	5.5	5.6	6.0	5.7
5. Trade deficit	4.3	-53.7	-46.8	-38.1	-53.4	-40.1	-39.4	-36.8	0.6	-6.9	-5.4	-4.1	-6.2	-4.5	-4.3	-3.9
6. Factor services	16.9	34.6	28.1	29.3	28.7	27.6	29.4	29.2	2.5	4.4	3.2	3.1	3.4	3.1	3.2	3.1
7. Unrequited transfers ^b	0.6	3.2	7.1	7.3	6.6	7.7	6.5	8.2	0.1	0.4	0.8	0.8	0.8	0.9	0.7	0.9
8. Current account deficit (4+5+6+7) = 3	26.1	7.7	22.2	38.1	15.6	28.9	37.8	38.4	3.9	1.0	2.6	4.1	1.8	3.3	4.1	4.0
9. GDP	671.3	782.6	869.1	931.8	855.9	882.2	911.0	952.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
10. GNY (Y = 9-4-6+7) ^c	649.5	721.2	800.1	855.6	786.9	813.2	833.8	877.4	96.8	92.2	92.1	91.8	91.9	92.2	91.5	92.1
11. Consumption	514.4	598.5	673.1	721.5	662.0	684.4	706.4	736.9	76.6	76.5	77.4	77.4	77.3	77.6	77.5	77.4
12. Investment	161.2	130.4	149.2	172.2	140.5	157.7	165.2	178.7	24.0	16.7	17.2	18.5	16.4	17.9	18.1	18.8
13. Excess expenditure over GDP (11+12+10) = 5	4.3	-53.7	-46.8	-38.1	-53.4	-40.1	-39.4	-36.8	0.6	-6.9	-4.5	-4.1	-6.2	-4.5	-4.3	-3.9
14. Excess expenditure over GNY (11+12+10) = 3	26.1	7.7	22.2	38.1	15.6	28.9	37.8	38.4	3.9	1.0	2.6	4.1	1.8	3.3	4.1	4.0
15. Growth rate of GDP (%)	4.6	1.6	3.3	3.9	3.6	3.0	3.3	4.5								
16. Growth rate of exports of goods and % of GDP	4.2 ^d	5.5	6.3	7.4	5.2	7.4	6.5	8.3	12.2	15.9	18.6	20.0	18.2	19.0	19.6	20.3
17. Growth rate of imports of goods and % of GDP	5.1 ^d	2.3	18.8	10.8	17.4	20.4	9.2	12.4	11.8	9.6	13.6	16.0	12.5	14.6	15.4	16.6

Source: ECLAC, on the basis of balance of payments and national accounts figures of 19 countries.

^a Resources needed to cover the losses resulting from the increase in the prices of imported goods over the prices of the goods exported by the region, at 1980 prices.

^b Corresponds to private inflows in the form of donations and other not official operations registered.

^c GNY = Gross National Income.

^d Corresponds to annual growth rates between 1981 and the averages for 1973-1975.

In these countries, foreign savings tended to crowd out domestic savings, strongly stimulating expenditure, especially on imported consumer goods, whose prices had fallen due to exchange rate appreciation and trade liberalization. As is very well known, the tariff and non-tariff liberalization measures were much more marked in the case of consumer goods, which had previously been heavily protected.

This excess of expenditure over domestic production or income was concentrated in the private sector, since the public sectors of many countries registered a marked improvement in this respect, with fiscal balances making big progress between 1983-1990 and 1991-1994 (Held and Uthoff, 1995). In contrast, private sector surpluses went down or deficits widened still further. A sample of eight countries shows that the public deficit went down from 4.2% to 2.2% of GDP, whereas the private sector surplus went down from 1.2% of GDP to a level close to zero (-0.1%).

Various policy options were available for tackling this situation (ECLAC, 1995a, chapter XI; Devlin, Ffrench-Davis and Griffith-Jones, 1995). However, most countries opted for permissive policies towards the heavy inflow of foreign capital.² This tended to generate unsustainable imbalances, since there was excessive exchange rate appreciation while the external deficits grew too fast: furthermore, the stock of short-term foreign liabilities also rose very sharply. It should be noted that these variables should be regulated so as to reflect medium-term equilibrium conditions on the domestic goods and monetary markets, as well as the sustainable supply of foreign savings.

In the period of reactivation between 1990 and 1994, which was mainly propelled by the disappearance of external constraints, macroeconomic policy management faced fewer demands than when the economy is already at its production frontier. In fact, a passive policy can give positive net results in such a situation. The inflow of foreign capital increases domestic spending capacity: directly in dollarized economies, through the monetization of such inflows in economies with a dollar standard or "currency

board" system, or through exchange rate appreciations. Aggregate demand for domestic and imported goods expands in a context of improved expectations fuelled by access to foreign funds. The supply of domestic goods and services can respond to the greater demand thanks to the available installed capacity, while the resulting increased imports are covered by the inflow of capital.

When the reactivation is completed and the production frontier is reached, any additional aggregate demand will require fresh productive capacity to satisfy it, and hence additional investment to cover this. Consequently, even in order to sustain the modest growth rates registered by Latin America in the first half of the 1990s (3.6% in 1991-1994) higher levels of investment are required,³ while in order to return to the average growth rate of 5.5% attained by the region between 1950 and 1980 several tens of billions of dollars of extra investment would be required every year, in addition to the rather more than US\$ 300 billion gross domestic capital formation recorded in 1994. It may be noted that the growing flow of foreign direct investment to the region only came to some US\$ 17 billion per year in 1993-1994 (approximately a quarter of the total net capital inflow), which highlights the magnitude of the challenge of increasing capital formation in Latin America.

The other noteworthy point is that when the production frontier is reached, more active policies are needed to regulate aggregate demand. Thus, it is essential to keep the rate of expansion of demand in line with the growth of productive capacity (and also sustainable external finance). Otherwise, if passive macroeconomic policies are adopted in situations of positive shocks of external origin (lower interest rates, improved terms of trade or increased availability of capital) or of a domestic nature (a boom in the construction sector or in the demand for durable goods or, in some countries, stocks and bonds), then the economy will be subject to inflationary pressures and/or a growing gap between expenditure and output; in all events, a need will be generated for a future adjustment in the opposite direction.

² See Calvo, Lederman and Reinhart (1995) regarding the origin of the increased supply of funds to Latin America. Ffrench-Davis and Griffith-Jones (eds.) (1995) present an analysis by the main source markets: the United States, Europe and Japan.

³ After the big declines in GDP in Argentina and Mexico in 1995 and the first quarter of 1996, the gap between utilization and capacity grew wider, so that a bigger increase in the effective GDP is feasible in the near future, feasible until the margin of under-utilization is exhausted.

The region should be able to leave the years of generalized recession behind. Consequently, as the production frontier is neared, there will be a greater need for more active and efficient macroeconomic policies. Indeed, this was the situation in 1994 and 1995 in a growing number of countries, although not many of them took prompt steps to adapt their policies to the new conditions.

The effects on productivity and volume of investment mean that less social well-being and less productive employment (and/or lower wages) will be generated. From a historical standpoint, this is similar to the contrast, in the industrialized world, for example, between the automatic adjustments of the nineteenth century and the 1920s, on

the one hand, and the adjustments of the period 1950-1980, on the other. In this latter period, the rate of utilization of installed capacity (or proximity to the production frontier) was much greater, as also was the investment ratio (Ffrench-Davis, Muñoz and Palma, 1994). As a result, the growth of per capita GDP in 1950-1980 was two or three times higher than in the other periods (and there was also a markedly greater increase in social well-being).

In the new circumstances of the region, it is necessary to further improve the capacity to implement macroeconomic policy in order to reconcile the proximity of the economy to the production frontier with sustainability and with price stability.

III

Operating on the production frontier

The magnitude of the gap between effective demand and production capacity has important static and dynamic effects.

Greater utilization of installed capacity increases the effective or *ex post* productivity of the resources available. The rate of utilization is closely linked to macroeconomic variables: "right" prices of foreign currency (the exchange rate) and of capital (interest rates), and predictability of aggregate and effective demand. This raises the profitability of capital and/or labour income.

In the dynamic dimension, higher rates of utilization and the consequent increase in effective productivity tend to stimulate investment in new capacity (Servén and Solimano, 1993b; Schmidt-Hebbel, Servén and Solimano, 1996). For the supply of investment to expand effectively, investors must perceive a real improvement in the short term and foresee that this improvement will be sustainable in the future. The dynamic effect will be all the more significant if solid expectations are generated among the economic actors that public policies will be applied that will keep effective demand close to the production frontier.

1. Analytical effects of a higher rate of utilization of installed capacity

Keeping aggregate demand and supply in line with each other and maintaining a suitable mix between

tradables and non-tradables—both of which are associated with macroeconomic relative prices, such as interest rates and the exchange rate, and the predictability of effective demand—are variables which decisively affect success or failure in achieving macroeconomic policy objectives.

One of the most fundamental macroeconomic balances relate to the rate of utilization of productive capacity. In economies with inflexible price systems, rigidities and incomplete factor markets, both positive and negative shocks provoke successive adjustments. The results are greater disparity between supply and aggregate demand, with a consequent gap between potential productive capacity and the use made of it, as well as a tendency towards negative effects on equity, since the low-income sectors, with less human capital, and small and medium-sized enterprises have less capacity to react to continuous unpredictable changes: they progress more slowly in boom times and have less chance to convert to other activities at times of recession. Instability is a significant source of inequity, and it rewards speculation at the expense of productive activities.

Unstable demand, in a stop-and-go setting, inevitably means less average net use of productive capacity and an average level of effective productivity below that of a situation of stable proximity to the productive frontier. All these variables affect the

quality of project evaluation and the *ex post* productivity and profitability of the projects implemented.

Higher rates of capital utilization mean that the average level of employment is higher and that the labour force combines with a larger stock of physical capital in use. The distribution of the fruits of higher productivity between labour and capital depends on various elements. However, higher effective productivity does mean that the potential well-being of both labour and rentiers can improve at present, and that its future growth can be enhanced.

As private investment is also presumably directly correlated with expectations of the dynamic stability of aggregate demand and macroeconomic prices, its proximity to sustainable equilibrium levels should increase productive capacity and facilitate entry into a virtuous circle that could lead to systemic competitiveness.

2. Performance in the 1980s and 1990s

In the 1980s, the region faced a severe crisis caused by the heavy indebtedness built up in the 1970s and the deterioration of the international trade and financial markets in which it operated. Together, these problems led to an acute shortage of foreign exchange which gave rise to an intense recession in the Latin American economies. The rate of utilization of the available productive resources also went down markedly.

At the same time, investment was discouraged by the shortage of external finance, the recessionary climate on external markets and the domestic adjustment policies adopted (based mainly on the restriction of aggregate demand and weak switching policies). As a result, capital formation went down all over the region in the 1980s (table 3).

The setbacks in production in Latin America meant that installed capacity was under-utilized. Labour, land and industrial plants were used on a smaller scale. The adjustment which took place in the main macroeconomic variables may be quantified by using as a base the two-year period 1980-1981, which marked the peak of per capita production, use of installed capacity and investment in most of the countries of the region.

The average for the subsequent recessionary period, 1983-1990, reflects the disappearance of the vigorous growth which had been exhibited (with a few exceptions) by Latin America and the systematic

decline in investment (table 3). At the domestic level, there was a sharp decline in economic activity. It had been estimated that the gross investment registered during the adjustment period would make it possible to keep the level of per capita production more or less constant, but in 1983-1990 average effective production was 6% below that of 1980-1981. This output reduction effect, equivalent on average to some US\$ 40 billion per year at the then current prices, was the result of policies that restricted demand excessively and weak switching policies. This confirms the importance of price inflexibility, factor immobility, incomplete markets and flaws in information during adjustment processes in the real economy.

In an "ideal" adjustment process, in a perfectly flexible and well-informed economy, excess aggregate demand is eliminated without any drop in production (or, more exactly, in the growth rate). In an economy where there is under-utilization of the capacity in the tradable sector, an adjustment with a balanced dose of production and expenditure-switching policies can raise output. Finally, in the typical context of an economy with inflexible prices and imperfect factor mobility, the implementation of neutral demand-reducing policies can lead to a significant drop in production, because such policies reduce demand for both tradables and non-tradables, thus giving rise to unemployment in the latter sector.

In the real world, in adjustment processes intensive in demand reduction, there usually tends to be a drop in production which gives rise to a lower rate of utilization of installed capacity and depresses the rate of capital formation. The addition of switching policies which act on the composition of production and expenditure can cushion the reduction of economic activity. Reallocation policies are inherently selective, but they may be global –such as those affecting the exchange rate– or they may be more selective. The East Asian countries provide examples of very varied levels of success with selective policies, and also of notably effective adjustment processes (Amsden, 1993; Bradford, 1992; Reisen, 1993). A good combination of expenditure-reducing policies and switching policies should tend to make possible an outcome closer to a constant rate of utilization of potential GDP (Ffrench-Davis and Marfán, 1989; Ffrench-Davis, 1994).

Per capita consumption went down sharply in the 1980s, but the biggest impact was suffered by

capital formation. In this adjustment process, investment and imports of capital goods fell to levels substantially lower than those registered before the crisis. Per capita fixed capital formation went down by a third between 1980-1981 and 1983-1990, with consequent negative effects on the expansion of productive capacity and generation of employment.

Capital inflows dropped to a quarter of the level it had registered in the two-year base period, while payments of interests and profits rose by nearly 40%. The drop in net transfers of funds accounted for some 60% of the total reduction in resources compared with pre-crisis levels caused by external shocks in 1983-1990 (8 points), reflecting the magnitude of the financial upsets and their prolonged effects. The remaining 40% was due to a marked deterioration in the terms of trade (Devlin and Ffrench-Davis, 1995).⁴

The combined effect of these external shocks meant that a given volume of domestic production translated into a lower level of domestic expenditure: per capita GDP went down by 6% between the two periods, while domestic expenditure dropped by 14 points and its investment component slumped by a third. These two figures also mark a notable break with the trends of the 1970s as regards the annual

increases in production (5.6%), consumption (6.1%) and investment (7.3%).

In brief, both the recessionary domestic context and the marked uncertainty and restrictions which hindered public and private management and investment capacity, contributed to the lower demand for investment funds. The repression of effective demand led to serious under-utilization of installed capacity, which naturally reinforced the decline in investment.

By the 1990s, however, thanks largely to the inflow of capital, aggregate demand recovered and gave rise to an increase in economic activity, while the gap between installed capacity and its utilization narrowed steadily. It may be estimated that approximately one-third of the increase in GDP was due to greater utilization of installed capacity, while newly-installed capacity tended to be fully used. This was particularly marked in countries like Argentina and Peru. Thus, there was a reversal of the generally negative situation of the previous decade.

The progressive movement towards the production frontier was one of the variables which stimulated the gradual recovery of the investment rate. Its effect was particularly marked in Chile, especially from 1993 onward.

IV

Economic policies which affect the degree of proximity to the production frontier

As has already been noted, one of the fundamental macroeconomic balances is the rate of utilization of productive capacity. During the 1980s, Latin America was far behind the international production frontier because of the prevailing external constraints, caused by the need to generate a net transfer of resource abroad. The way anti-inflationary programmes are approached can also significantly affect that macroeconomic balance. Anti-inflationary and

adjustment policies designed to face external shocks affect the macroeconomic context and the rate of utilization of available resources, and the latter, in turn, affects profitability and the rate of formation of new productive capacity (Schmidt-Hebbel, Servén and Solimano, 1996).

In contrast with more stable markets, cyclical markets tend to give rise to negative results in these variables, and traditional anti-inflationary and adjustment approaches usually give rise to procyclical behaviour (Ramos, 1991). The essential features of such approaches are: i) they use only one or a few variables to tackle each problem; ii) they are applied in an indiscriminately uniform manner (in all countries alike); iii) they are broad rather than selective; and iv) they are linear (they always advocate bigger

⁴ The deterioration in the terms of trade was associated with the increase in the region's traditional exports to external markets, where demand registered only feeble growth (for a detailed analysis of this subject, see ECLAC, 1995a, chapter III). Since 1994 there has been a substantial, albeit only partial, recovery in export prices.

doses of the same medicine, regardless of the conditions being faced).

In the case of prolonged external shocks –such as the debt crisis– the automatic adjustment approach is characterized by the fact that it multiplies the effects of the external recession at the domestic level. In other words, the automatic adjustment adds a further drop in domestic production to the reduction in national income generated abroad by deterioration in the terms of trade and reduced access to real and financial markets; such an adjustment may well be very effective in narrowing the external gap, but it gives rise to serious macroeconomic inefficiencies because of the low rate of utilization of productive capacity and the lower rate of capital formation.

In order to avoid this destructive multiplication caused by the automatic adjustment, active monetary, credit, fiscal and trade policies are required, along with a specific productive development policy. Basically, the objective is to coordinate the development programme and short-term policies with the aim of modifying the structure of expenditure and production so as to keep up a higher rate of utilization of domestic productive capacity and strengthen rather than weaken capital formation.

In order to achieve these objectives, it is necessary to use direct and indirect public policies to regulate the overall level of aggregate demand and influence the structure of expenditure and production through selective instruments to reallocate resources and develop markets which are incomplete or non-existent (ECLAC, 1992 and 1995a, chapters VII and VIII).

1. Anti-inflationary policies

The policy mix used may involve the removal of hindrances to sustainable development, but it may also add to them. This latter phenomenon is not unusual, especially when priority is given to price stability for its own sake, or it is seen as the main ingredient for spontaneous economic growth. Approaches of this type, which seek “stabilization at any price”, may result in stabilization accompanied by stagnation, or short-lived stability followed by instability.

Conventional price stabilization policies are based on the deliberate restriction of overall demand (in the case of the Friedman-style closed-economy monetarist model) or on exchange-rate freezes and a passive monetary policy (linked to the availability of

international reserves, in the so-called monetary or “currency board” approach to the balance of payments). This latter approach is of course equivalent to the automatic adjustment of the gold standard, and its aim is to make the evolution of domestic aggregate demand on the external prices of tradable goods, or both, determine the domestic behaviour of prices. They can indeed do this, but only with significant lags and the loss of the ability to use exchange-rate policy as an active instrument for adjusting relative prices. Consequently, automatic adjustment processes usually result in significant rates of under-utilization of available resources.

In order for stabilization programmes to have lasting effects and to contribute to development (which they undoubtedly do very effectively when they are well designed), they must constantly take account of the hysteresis of the adjustment process: the way the basic components of growth (investment, training, technological innovation, etc.) evolve and are managed, and the way they affect the capacity and opportunities of the various sectors of society. Stabilization programmes can have progressive or regressive effects, depending on their characteristics.

a) *Single-anchor programmes*

Programmes based on a single variable for leading the stabilization process (single-anchor programmes) usually give rise to procyclical results: they are short-lived and generate little growth in productive capacity. The two most typical types of single-anchor programmes are those based on fixing the exchange rate or controlling the money supply alone.

Fixing the nominal exchange rate obviously helps to check inflation in the short term. In certain circumstances this approach may be irreplaceable as a means of regulating destabilizing or anarchic expectations. Although they can fulfill such a positive function, however, their stabilizing effect is noted most forcibly and rapidly on tradables, whereas the prices of non-tradeables react only sluggishly (table 1). The typical result of this is significant exchange-rate appreciation, as observed in Argentina and Chile in 1978-1981 and in Argentina and Mexico in 1991-1994. These countries succeeded in bringing down inflation, even to negative rates (this happened in Argentina in some months of 1995 and 1996 and in Chile in a few months of 1982), but at the cost of unsustainable distortions in the external sector.

For conjunctural or political reasons, the generation of such imbalances may sometimes be unavoidable. What is essential is to be aware of these effects and to seek an effective way out before the necessary corrective measures are overdue and traumatic.

Something similar occurs when a single anchor based on the money supply is used. Except in cases of incipient inflation and economies without any history of indexation, exclusive use of monetary restrictions as a means of reducing inflation usually leads to prolonged under-utilization of productive capacity, even when the initial level of utilization is already low.⁵ This was partly what happened in Chile between 1974 and 1976, when a serious recession coincided with persistent high inflation. In such cases, the inertial inflation component, which is contained in aggregate supply, continues to push up price levels for some time, even though there is growing unemployment and under-utilization of domestic productive capacity (Fanelli and Frenkel, 1994); Ramos, 1991.

Relying exclusively, or too much, on a single monetary variable can lead to excessively high real interest rates. This favours the financial dimension at the expense of production and tends to place the economy behind the productive frontier. For both of these reasons, it discourages capital formation and the generation of productive employment.

b) Multi-anchor programmes

In order to achieve success—that is, sustainable stability with high rates of utilization, and growth with equity—it is necessary to coordinate a set of variables or prices: in this way, it is more feasible to avoid a situation where some important variables—public and private-sector wages, the exchange rate, the prices charged for public services, the money supply, interest rates, the fiscal balance and the expectations of those who set private-sector prices—lag behind or advance too quickly. Efforts to achieve a social agreement among the main economic actors,⁶

even though they may be of limited scope, may be important for reaching, through a coherent set of policies, more sustainable balances and higher effective productivity, associated with the possibility of operating closer to the production frontier.

Naturally, it is not necessary to coordinate all the important variables. Once a concerted and harmonious critical mass is achieved, the other variables will tend to follow its average evolution in due course. The essential thing is to break the inertial component. This is very difficult to achieve, however, with the use of a single anchor or something similar, where the variable or variables used for the purpose (exchange rate, public- or private-sector wages or effective demand) will tend to lag behind the equilibrating adjustments that may be required.

The coordinated use of a set of policies will help to reduce uncertainty among investors and avoid the appearance of prices which are significantly out of line: the so-called “outliers”.⁷

2. External shocks

In economies with price rigidities, resource inflexibility and incomplete factor markets, both positive and negative external shocks give rise to adjustment problems. As a result, there are bigger disparities between aggregate supply and demand, and the gap between the production frontier and the actual utilization of installed capacity grows wider.

In spite of the diversification which has taken place in the region's trade, fluctuations in the terms of trade still play a significant role. As noted earlier, the deterioration in export prices suffered in the 1980s was equivalent to 40% of the total effect of the three negative shocks which affected Latin America in that decade.⁸

When passive economic policies are applied, positive shocks translate into an increase in income and, hence, in domestic expenditure. Economic activity can respond to this insofar as installed capacity is

⁵ Even in such cases of “new” inflation it is possible that more instruments than mere control of the money supply may be needed in order to change expectations (for an analysis of the role played by nominal interest rates in Costa Rica in the early 1980s, see Castillo, 1986).

⁶ As in Israel in 1985 (Bruno and Piterman, 1988), Mexico since 1987 and Chile since 1990 (with agreements on the readjustment of minimum wages and tax reforms).

⁷ It may be noted that this proposal for the use of multiple anchors is consistent with, rather than contradictory to, the option of sequential structural reforms. In this respect, see for example Dewatripont and Roland, 1995.

⁸ Fortunately for the region, the 1994-1995 negative financial shock coincided with a substantial positive shock in the terms of trade.

available. This is what happened in Chile between 1986 and 1989, after a spectacular improvement in copper prices. Once the production frontier has been reached, however, if the shock still persists it will cause demand pressures that give rise to higher domestic prices and/or an increase in the external deficit. As variations in external prices are largely transitory, however, if the economy accommodates to that abundance, the subsequent adjustments will be traumatic. The lesson learnt in their respective economies led Colombia and Chile to establish stabilization funds –for coffee and copper, respectively– which sterilize price rises considered to be transitory and make resources available later, when the commodity prices go down (Ffrench-Davis, Agosin and Uthoff, 1995). The aim is to reduce the destabilizing effects on aggregate demand caused by transitory shocks in the terms of trade.

Another source of external shocks are changes in international interest rates. These variations affect domestic rates to a certain extent and their effects are thus transmitted through relative prices to aggregate demand; they influence the volume of net capital inflows, affect national income –since a rise (fall) in external interest rates reduces (increases) the national income of a net debtor country–, and they affect the availability of foreign currency and hence the foreign exchange market.

Finally, a third source of external shocks, which has strongly influenced the macroeconomic instability of Latin America since the 1970s, are sharp fluctuations in capital movements, which have been analysed in depth elsewhere (see, for example, Ffrench-Davis and Griffith-Jones, 1995). In this respect, private capital flows other than foreign direct investment are particularly noteworthy because of their volatility.

As shown by the experience of the countries which successfully surmounted the financial crisis set off in late 1994 in Mexico, systematic efforts are needed to ensure that the funds received can be absorbed efficiently, that they are associated with investment in productive activities, and that a suitable proportion of that investment goes to the production of tradables. All this calls for active foreign exchange policies, strict arrangements for prudential supervision of the financial system, and regulations governing capital movements, especially of short-term capital (ECLAC, 1995a, chapters IX to XIII).

The heavy inflows of external capital –much of it of a short-term nature– registered by a large number of Latin American countries in recent years has made it more difficult to perceive the weaknesses that still persist in the real economy: low investment in productive activities, low rates of saving, low-quality education, broad sectors suffering from extreme poverty, and growing external deficits.

Just as the Mexican crisis was incubated for a long time, so the economic strength of Chile was built up over a number of years. This strength is due fundamentally to the fact that in recent years Chile has adopted cautious policies with regard to the abundance of external funds. Instead of receiving and spending all the external resources offered and allowing the peso to appreciate still more, the authorities opted to restrict the inflow of short-term capital, while also maintaining strict prudential supervision, actively sterilizing the monetary effects of external-sector activities, and applying an active exchange-rate policy. Chile also achieved a fiscal surplus; in this latter respect, Chile's behaviour was somewhat similar to that of Mexico. With regard to capital inflows, in 1991 the Chilean authorities established a tax and a heavy non-interest-bearing reserve requirement on both external credits and foreign-currency deposits, thus effectively discouraging the inflow of speculative capital (Agosin, 1996).⁹

Fiscal policy could also make a bigger contribution to the regulation of aggregate demand, especially by incorporating compensatory taxes. These taxes would be raised in boom periods, for instance of high export prices, with temporary sterilization of the revenue thus obtained, while at times of recession they would be lowered to stimulate the private sector, and the public sector, could use the funds built up in the expansionary periods.¹⁰

⁹ This is the main reason why, towards the end of 1994, Chile had a moderate external deficit and similarly moderate level of short-term indebtedness, domestic investment was the highest ever, and in 1994 the exchange rate was in better shape than in most other Latin American countries (table 2). For a comparative examination of the cases of Chile and Mexico and the scope of the contagious effects of the Mexican crisis, see Ffrench-Davis, 1997.

¹⁰ Chile recently established that a certain proportion of the Value Added Tax may be varied by the economic authorities in line with the evolution of the domestic economic situation.

V

Conclusions and lessons

Intensive reforms aimed at increasing economic growth have been implemented in most of the countries of the region. There is no doubt, however, that GDP growth has generally been very limited in the 1990s. Although some countries have registered high growth rates in one or more years, the gap between potential and effective GDP in the early 1990s tended to be very substantial in all but a few cases.

Out of the average growth of 3.6% registered in the region between 1990 and 1994, nearly a third corresponded to greater use of productive capacity. This higher level of utilization was closely linked to the capital inflow, which recovered and gathered speed in this period. Actual growth in productive capacity is therefore estimated to have been only about 2.5% per year.

What is the reason for these unsatisfactory results? To begin with, the investment rate has been very low. Gross capital formation has been recovering, but only slowly, and from very depressed levels; the ratio for 1983-1990, measured in 1980 dollars, was only 17%, which is very low compared with the level of 24% registered in 1976-1981.¹¹

It is not feasible to attain a high economic growth rate with a low investment ratio. What is needed is both a high rate of investment and improvements in productivity, since these two factors strengthen each other.

In view of the disparity between aims and actual achievements, it may be concluded that the effects of the reforms are only slow, at least as regards the recovery of gross capital formation and growth. Why should this be so? This is a question that should not be sidestepped. One possible answer is that the process naturally takes time. It should not be forgotten, however, that time is a very valuable commodity in economics. The current value of the effects of any economic policy is highly important, and not just the flows achieved at the end of the adjustment process.

Another possible answer is that the reforms have been very simplistic, against a background of seg-

mented and incomplete markets. Our own reading is that both interpretations are correct, and that the over-simplicity referred to helped to make the lag in the effects of the reforms even greater. An eloquent example was the long adjustment process in Chile, with low average investment rates between 1974 and 1989, average growth of less than 3% (between 2.5% and 2.9%, depending on the sources used), and average real wages which recovered their 1970 level only as recently as 1992.

There are a number of variables which explain the weak performance of investment in Latin America. During the 1980s there was a high rate of under-utilization of the available productive resources. Most of the countries of the region were operating far below their production frontier, and this discouraged gross capital formation in the non-export sectors: that is to say, in four-fifths of total production.

The recovery in activity between 1990 and 1994 (about 6 points of GDP representing an increase of some US\$ 90 billion in the 1994 annual output, compared with 1990) meant that they came somewhat closer to that frontier, but generally speaking this increase has been very recent, coming after many years of a wide gap. Gross capital formation only reacts to this with some delay, and only when there are expectations that this recovery will be sustainable. If this were the only relevant variable, this could explain not only this insufficient recovery, but also the gradual recovery observed up to 1994. The recent events in Argentina and Mexico show that the phenomenon may be only transitory, and this prolongs the lag and reduces expectations.

The main exception, Chile, has managed to stay close to its production frontier in the 1990s. Its rate of gross capital formation gradually began to recover as from 1988, with some ups and downs; it speeded up in 1993, and in 1993-1996 it has been significantly higher than at any time since 1971, having exceeded the average for the 1960s (although it continues to be markedly below the rates of East Asia). This notable progress in Chile, apart from being associated with the country's capacity to reach social and political agreements, seems to be due to a

¹¹ Note the differences between the figures in current and constant terms in 1980 and 1990 dollars (see footnote 1).

substantial change in its macroeconomic policies, which have become deliberately active in the areas of monetary policy, sterilizing intervention, exchange-rate management, prudential supervision and regulation of capital movements.

The following conclusions may be drawn from this set of reflections.

The weak recovery of gross capital formation in most of the countries of the region is due above all to the gap still existing between the effective GDP and the production frontier, or to the perception that although the gap has narrowed to some extent this is not seen by the market as sustainable. This is a function of the quality of macroeconomic policy.

Secondly, it is due to "wrong" macroeconomic prices, which are also a function of the quality of the policies in question and the development of the domestic capital and foreign exchange markets. The exchange rate, which is an effective stimulant for the production of exportables, began to appreciate markedly in the early 1990s. Between 1990 and 1994 it appreciated in countries of the region which account for 93% of the regional GDP, while current account deficits also rose sharply. The evolution of the exchange rate was obviously not in line with that of the real economy, and so investors noted that as the economy came closer to the production frontier, the exchange rate lagged behind, and in several countries an undesirable inconsistency occurred: against all pragmatic recommendations, rapid liberalization of imports had to coexist with exchange-rate appreciation. Generally speaking, exchange-rate appreciation discourages the production of tradables, and in the particular conditions in question it also discourages the production of importables, thus weakening any positive impulse for gross capital formation (Agosin and Ffrench-Davis, 1993). The lesson to be drawn from this is that it is not advisable to give up the possibility of applying exchange-rate policies by tying one's hands through the adoption of a fixed nominal exchange rate.

The other main macroeconomic price—interest rates—has also behaved in a way that discourages gross capital formation. Although in many cases these rates were not as high as during the debt crisis of the 1980s, very high real rates still prevail (ECLAC, 1995a, table IX.14). This is not an intrinsic result of the market, but rather of the way the financial reforms have been carried out; the contrast with the financial reforms effected in East Asia is very

marked (Bradford, 1992), since in the latter case the predominant feature is the creation of markets for the long-term segment, and moderate interest rates.

The high real interest rates, a market oriented towards short-term operations, and the limited access that small and medium-sized (and even large) enterprises have to that market, form a real obstacle to changes in production of a constructive nature. This indicates that the financial reforms have been very deficient, leaning towards high-risk portfolios¹² at interest rates that are "out of line". A serious effort needs to be made to reform the reforms in order to create, replicate or simulate markets for long-term operations, small and medium-sized enterprises, technology and human capital.

It is important to ensure that capital inflows go to productive investment; excessive diversion to purely stock-market investments and to consumption of imported goods leads to bubbles and unsustainable imbalances.

The fact that exports may be growing rapidly is no guarantee of sustainability. A persistent increase in imports at a faster rate than exports is cause for concern and should be corrected promptly in order to avoid an unsustainable build-up of debt and other foreign liabilities.

Indiscriminate opening of the capital account can do great harm to productive development and the well-being of the bulk of the population. Foreign exchange and macroeconomic instability, usually associated with unrestricted opening, is always very costly to the productive sectors and to the cause of equity. We have seen, however, that effective and efficient regulation is perfectly possible, as Chile and Colombia have shown in recent years (Devlin, Ffrench-Davis and Griffith-Jones, 1995; Folkers-Landau and others, 1995). The application of suitable foreign exchange and monetary policies is an essential step, but insufficient on its own. In order to achieve effective macroeconomic management they must be accompanied by efficient regulation of capital movements and stabilizing management of aggregate demand. There has been some interesting progress in these fields in various countries of the region (ECLAC, 1995a, chapter XI).

¹² Paradoxically, these portfolios have turned out to be risky in spite of the fact that small and medium-sized firms have little access to them. The root of the problem lies in the abundance of cross-linked loans, excessive interest rates, adverse selection of borrowers, and the instability of aggregate demand (ECLAC, 1995a, chapter XII; Held, 1994).

Finally, in order to generate sustainable economic and social development it is also necessary to take measures for the effective promotion of investment in people. Pragmatic management of macroeconomic aspects and capital flows facilitates this task. Education, health and labour force training are indispensable ingredients, as noted in the ECLAC proposals on changing production patterns with social equity. Adjustment processes must not sacrifice such investment, because it is crucial for building a better future with equitable growth. However, mesoeconomic shortcomings which hinder microeconomic actions have continued to be a significant obstacle.

Investment in infrastructure has been weakened and is still at a relatively depressed level. The long-term segments of the capital market are stunted. Efforts to upgrade labour skills are few in number and often outdated. In short, because of their poor quality and lack of pragmatism, the macroeconomic adjustments have often sacrificed balances which are highly important in the longer term, such as a balanced current account and a competitive exchange rate, and have held back mesoeconomic action. The result tends to be a mixture of unsustainable balances and limited growth.

(Original: Spanish)

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Capital flows: *lessons from the* Chilean experience

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This article examines the capital regulation system used in the Chilean economy in recent years. It begins by describing the factors determining international capital movements in recent times and the role of the financial system in the intermediation of such flows. It then considers the Chilean policy on the regulation of capital flows, which seeks to solve the problem of how to reconcile the reduction of inflation with the maintenance of a real exchange rate compatible with export competitiveness. The policy instruments used include intervention by the Central Bank, which is reflected in a strong increase in the international reserves, together with open-market money sterilization operations. In view of the limitations of this strategy, the process has been accompanied by gradual real devaluations of the peso. In addition, since mid-1991 Chile has applied non-quantitative controls on capital which seek to discourage the entry of short-term resources. Another salient feature of Chilean capital regulation policy has been the adoption of a more flexible approach to capital outflows. The article concludes that this policy has favoured the attainment of high rates of domestic saving and helped to reduce the vulnerability of the Chilean economy. Other important factors in these achievements have been the austere fiscal policy applied and the application of suitable requirements of a prudential nature to the banking system.

I

Background

Now that more than a year has passed since the devaluation of the Mexican peso and the so-called "tequila effect" which affected the economies of the region to different degrees, the recessionary and inflationary effects of that situation, linked with a sudden reversal of international capital flows, still cause problems for some countries.

It is generally agreed that those capital flows have favourable effects, such as supplementing domestic saving—which is usually low in developing economies—, diversifying risks and minimizing the costs of adjustments due to discrepancies between income and expenditure.

However, experience shows that in the absence of policies that favour the preservation of the fundamental macroeconomic balances ("fundamentals")¹ through suitable regulation, the entry of heavy international financial inflows can have harmful effects on the performance of the recipient economy. In particular, the experience of the two-year period 1994-1995, which affected some countries of the region particularly strongly, shows that the reversal of these flows can also involve significant costs in terms of reduced activity and increased unemployment and inflation.

Chilean economic history itself bears witness to lax management of capital flows, in a context of financial liberalization, during the period 1979-1982. This had clearly harmful consequences in the form of a sharp appreciation of the currency which distorted the allocation of resources between tradeables and non-tradeables and the availability of funds for financing investment, among other aspects.

□ The authors wish to express their gratitude for the valuable comments of Ricardo Ffrench-Davis and Heinz Rudolph.

¹ This concept covers both the solidity and stability of these balances and the correspondence of key relative prices with their medium-term trend values.

We thus see that the free circulation of international financial resources has both positive and negative effects. The challenge facing public policies is to strengthen the positive effects without compromising the macroeconomic balances, by keeping the fundamentals at their trend values within a regulatory scheme which guarantees the stability of the financial system while allowing it to play a heightened inter-mediation role.

This challenge became even greater in the early 1990s when there was a strong flow of capital to the emerging economies, including Chile. In the Chilean case, the application of an active policy of regulating international capital movements has made it possible to keep up a successful economic performance (table 1). Even in 1995, when Latin America's overall growth sank to approximately 0%, the Chilean economy turned in favourable results, reaching for the first time in three decades a rate of GDP growth (8.5%) which was higher than the rate of inflation (8.2%). The prospects for 1996 are that both growth and inflation will be around 6.5%.

This article describes the scheme of regulation of international capital flows used in the Chilean economy during the 1990s, and some lessons regarding policy are drawn from this experience.

TABLE 1
Chile: Macroeconomic results
(Percentages)

	Real GDP growth	Inflation	Unemploy- ment	Investment as % of GDP
1987	6.6	21.5	9.3	22.2
1988	7.3	12.7	8.1	22.8
1989	9.9	21.4	6.3	25.5
1990	3.3	27.3	6.0	26.3
1991	7.3	18.7	6.5	24.5
1992	11.0	12.7	4.9	26.8
1993	6.3	12.2	4.6	28.8
1994	4.2	8.9	5.9	26.8
1995 ^a	8.5	8.2	5.4	27.6
1996 ^b	6.5	6.5

Source: Central Bank of Chile.

^a Preliminary figures.

^b Estimates.

II

The factors determining international capital movements in the 1990s

1. Conceptual aspects

International capital inflows play a decisive role in the economic development process. Among the functions traditionally ascribed to them, one of the most important is that of mobilizing capital to the developing countries, which enables them to supplement their domestic saving, raise their levels of investment, and stimulate their growth. The mobility of capital also favours the diversification of risks and makes it possible to minimize the cost of intertemporal adjustments due to discrepancies between income and expenditure.

However, certain imperfections in the functioning of capital markets may give rise to externalities and result in disparities between private and social values. The fundamental theory of the economy of well-being –that every competitive balance leads to a Paretian optimum– is based on two key assumptions: first, that the information must be exogenous, i.e., it must not be affected by the actions of any of the agents in the market, and second, that the market must be supplied with a full range of products. These assumptions are clearly not fulfilled in the case of financial markets, because supplying information is one of their essential functions. Moreover, some risks may remain outside the coverage of insurance, and there are no great incentives for banking establishments to provide long-term finance (Stiglitz, 1993).

A characteristic feature of financial markets is that lenders and investors basically consider the profitability they hope to obtain, undervaluing the total surpluses generated by the enterprise they are considering financing. Consequently, projects which offer the highest expected profitability for the lender may not coincide with the projects that give the biggest yield, but they will nevertheless be financed. Likewise, if the information is faulty the financial markets may not be balanced. In these markets, those who are willing to pay more may not be the same as those who represent the biggest expected return for

the lender. Indeed, the profitability may fall if interest rates are raised, as the probability of insolvency will also tend to rise. As a result, credit may be rationed: even when there is excessive demand for credit, lenders can avoid raising interest rates by making adjustments in the amounts involved.

These imperfections in financial markets have clear repercussions on the international mobility of capital, since they hinder enjoyment of the potential benefits of resource flows. Firstly, as far as the role of external saving is concerned, conditions may not always be ideal. Countries may replace domestic saving with external saving, and investments may not always be efficient, or may not be sufficiently concentrated in tradeables to generate the necessary foreign exchange flows (Devlin, Ffrench-Davis and Griffith-Jones, 1994). Capital inflows naturally tend to lower interest rates and stimulate domestic spending. The portion that goes to tradeables tends to settle in through a larger current account deficit. However, there is also excessive demand for non-tradeables, giving rise to a tendency towards real currency appreciation, a larger non-tradeables sector, a small tradeables sector and a large trade deficit.

Secondly, with regard to the diversification associated with the free mobility of international financial assets such as portfolio investments, it should be noted that these flows are characterized by their sudden reversals. Unlike other forms of capital –such as foreign direct investment, loans from international financial institutions or long-term bank loans– portfolio investments inherently involve the risk of sharp short-term reversals. This volatility can give rise to big fluctuations in exchange rates, interest rates, or both at once. The unpredictable nature of their effects on prices can discourage domestic and foreign investors from increasing their investments in the country, and if the fluctuations in interest rates or exchange rates are very pronounced, they may affect the economy as a whole (Devlin, Ffrench-Davis and Griffith-Jones, 1994).

These elements can also serve to impede the inflow of compensatory capital to such an extent that severe economic adjustments are needed because of discrepancies between income and expenditure, forcing developing economies to pay heavy costs when they run into adverse external conditions. For such economies, whose international reserves run out easily, any external upsets which reduce the flow of capital will immediately force cuts in domestic expenditure, in an effort to restore the balance-of-payments equilibrium. Production will almost certainly go down, depending on the irreversible elements which exist, in view of the natural rigidities which impede the reallocation of resources, thus setting off a tendency towards a drop in investment.

These factors were observed in all their magnitude during the recent crisis associated with the "tequila effect", which hit Mexico and Argentina particularly hard.

2. The role of the financial system in the intermediation of capital movements

At the microeconomic level, an inflow of capital into the country will increase the volume of funds handled through the financial system and hence the volume of domestic assets and liabilities.

Experience shows that in a financial system which has been only recently liberalized to operate under market conditions, where supervision is still in the process of adapting to the new conditions, and which is receiving heavy capital inflows, interventions in the exchange market which are not fully sterilized expose the banking system to bigger credit risks because of the expansion of its assets. It has been noted that a rapid increase in loans by the banks is usually accompanied by a relaxation of the standards of loan risk assessment. Such an increase is usually concentrated in a few sectors, and any reversal of the cycle is usually accompanied by a deterioration in the risk level of the investment portfolios of financial establishments (Gavin and Hausmann, 1995).

Moreover, in the economies most seriously affected by the spread of the Mexican crisis, the low quality of the bank assets limited the possibility of applying adjustment policies based on increased interest rates in response to the loss of confidence in the local currency. Thus, an indirect effect of a sudden rise in short-term interest rates was an increase in

the unprofitable assets of the banks. Since the loans supplied by local banks are a fundamental source of finance in emerging economies, it is almost sure that any sustained rise in interest rates will have a strongly contractive effect, will lead to a deterioration in the average quality of debtors, and will encourage adverse selection practices, thus undermining the solvency of the institutions concerned. In such circumstances, the Central Bank will have less leeway for resorting to increases in interest rates (IMF, 1995).

3. International capital movements in the 1990s

According to preliminary estimates prepared by international organizations, in 1995 Latin America's net financial resource transfer balance was negative for the first time since 1990: -10.6 billion dollars (ECLAC, 1995; IMF, 1995). It is interesting to note, however, that the upward trend in international capital inflows already began to reverse in 1994, which means that other factors must be added to the Mexican crisis in order to explain the behaviour of these resource flows. It may be noted that positive transfers to the region amounted to US\$ 11.5 billion in 1994 and US\$ 34 billion in 1993. These figures exclude extraordinary balance-of-payments finance, which came to US\$ 29.1 billion for Argentina, Mexico and Nicaragua together.

Some of the factors which help to explain the big increase in the flow of capital to emerging countries between 1991 and 1993 also help in understanding the change in the behaviour of capital movements in 1994 and 1995 (Corbo and Hernández, 1996). In 1994, the speed-up in growth and the rise in interest rates in the United States, together with an adjustment in the financial conditions of various important industrialized economies, caused investors to reorder their global portfolios to the detriment of the emerging economies (Griffith-Jones, 1994). When, in addition to the foregoing factors, we remember that the effects of the Mexican crisis undermined investors' confidence in the soundness of the region's economies and the solidity of its macroeconomic fundamentals, it is easy to understand why the transfer of funds to Latin America was negative in 1995.

Notwithstanding the foregoing, however, a number of changes have shaped a new institutional scene and decisively influenced the way capital has responded in the 1990s to the financial conditions of

the developed countries or to basic macroeconomic imbalances in the emerging economies. In the first place, the liberalization of capital movements in most of the latter has meant the growing integration of their markets into the global financial markets. Secondly, the weight assumed by financial securities in international finance has meant that syndicated bank loans are giving way to stocks and bonds as the preferred instruments for capital transfers to emerging markets (Hale, 1995). Thirdly, the increase in institutional investors has meant that capital flows to emerging economies are now determined by considerations of liquidity and profitability rather than by long-term banking relations (IMF, 1995).

These changes in the environment have had at least two important consequences. On the one hand, the liberalization of cross-border transactions and the gradual integration into global capital markets have allowed firms and individuals in the largest emerging economies to gain access to low-cost transactions on the international banking and capital markets, not just at the wholesale but also at the retail level. If residents have doubts about the sustainability of the exchange-rate policies of their country, they can adjust the currency denominations of their financial assets quickly and cheaply (IMF, 1995).

III

Policies applied in the Chilean economy for regulating international capital movements

The renewed flow of capital to the emerging economies has had favourable repercussions on levels of activity and investment in them, but, on the other hand, has given rise to pressures which have affected the money supply and caused trends towards appreciation of the currency.

The banking system, for its part, has been at the centre of the crisis associated with the "tequila effect", inasmuch as it has had to absorb the effects of the interest rate rises needed to defend the value of the national currency. Financial liberalization, together with capital inflows that have not been sub-

On the other hand, the current incorporation of the emerging economies into the global capital markets has made them more vulnerable to external events, such as changes in the cycles of the industrialized economies and problems in any of the major financial markets. Although recent experience shows that the problems of any important economy spread regionally and globally, it should be emphasized that once the initial panic has been brought under control markets do discriminate, albeit imperfectly, in the light of the solidity and stability of the economies' fundamental variables.

In general terms, countries with low rates of saving, big current account deficits, weak banking systems and heavy short-term indebtedness have suffered heavier external pressures than countries with solid and stable fundamental variables. In the final analysis, the leeway for applying economic policies that let these variables get out of line has narrowed very considerably, so that the present challenge is to keep economies in balance before investors oblige the authorities to adopt more costly solutions. This points to the need for policies which regulate capital movements and thus permit efficient management of the macroeconomic and financial risks associated therewith, yet without giving up their benefits.

ject to proper supervision, has proved to be fertile ground for future banking crises (Rojas-Suárez and Weisbrod, 1995).

In the case of Chile, measures to promote and diversify exports lie at the centre of the development strategy. A key variable in this respect has been a stable exchange rate compatible with medium-term external equilibrium. The ongoing reductions in inflation have also played an essential role in the Chilean development process, since it is generally recognized that lower rates of inflation favour efficient resource allocation and stimulate the competitiveness of the economy.

TABLE 2

Chile: Net capital movements
(As a percentage of GDP)

	1991	1992	1993	1994	1995	1990-1995
Net capital movements	2.3	6.7	6.0	8.9	1.7	6.0
Foreign direct investment	1.2	1.5	2.5	3.4	1.5	2.3
Medium- and long-term	-0.2	0.7	1.1	2.6	-0.3	0.9
Short-term	1.3	4.5	2.4	2.9	0.5	2.8

Source: Central Bank of Chile.

In 1990-1995, the average annual net flow of capital into Chile was 6% of GDP (table 2). The flows of foreign direct investment and medium- and long-term capital not only represented over 50% of net capital inflows during that period but also registered an upward trend over time. It is worth noting that foreign direct investment gradually increased year by year, amounting to 3.4% of GDP in 1994.

In Chile, this led to a policy dilemma: how can reductions in inflation be reconciled with the maintenance of a real exchange rate compatible with a balance-of-payments current account deficit that is sustainable in the medium term?

In 1995, the Chilean economy, like other countries in the region, also registered a decline in the net inflow of capital, which came to 1.7% of GDP. Within this figure, foreign direct investment amounted to 1.5% of GDP. Although this investment registered a 19% increase over the previous year, this growth was offset by the decline in inflows of portfolio capital in the first three quarters of the year. Medium- and long-term loans, for their part, suffered a drop of -0.3%, mainly because of prepayments of US\$ 1,391 million of external debt to multilateral agencies by the Government and Central Bank.

Notwithstanding the foregoing, the interesting feature of the Chilean case is that its economy has not been affected much in terms of its macroeconomic results. Furthermore, the prospects for 1996 indicate that there will be a net recovery in the inflow of capital, both as regards foreign direct investment and portfolio capital.

The strategic objectives of the capital movement regulation policy applied in the Chilean economy are, on the one hand, to avoid the disturbances that capital inflows can cause in expenditure, inflation and the exchange rate and prevent these variables from being unbalanced or diverted from their medium-term trends and, on the other, -an objective which has always been a central element in the management of

the economy- to take the necessary steps, through suitable prudential regulations and active follow-up action, to prevent any risk that the growing intermediation of capital by the banks might affect the solvency and stability of the financial system. All this is designed to guarantee efficient coverage of the credit and financial risks involved in banking operations.

1. Macroeconomic aspects

As already noted, the central aim of Chilean macroeconomic policy has been to avoid the distortions that capital inflows may cause in inflation and the exchange rate.

The fundamental instrument in Chilean anti-inflation policy is management of the short-term interest rates offered on Central Bank securities. This instrument, together with fiscal policy, helps to keep aggregate expenditure and production in line with a rate of real growth of the product that is sustainable in the long term (in the light of the growth rates of the labour force, investment and productivity).

This approach has permitted the Chilean economy to bring down inflation gradually but steadily, attaining single-digit inflation in 1995 for the second year running.

The growing openness of the capital account and the consequent integration of the country's financial market into the global markets has reduced the leeway for interest rate policy by narrowing the difference between the domestic and external rates.²

² In countries with a flexible exchange rate, appreciation of the nominal exchange rate in periods when there are heavy inflows of capital can insulate the economy from the monetary and credit effects of such flows. However, abrupt movements in the real exchange rate can impose severe adjustments, especially if the appreciation is reversed when the capital is withdrawn.

TABLE 3

Chile: External accounts and capital flows

	Current account deficit ^a	Net international reserves ^b	Exports of goods (billions of dollars)	
			Total	Excluding copper
1987	3.9	8.0	5.2	3.0
1988	0.7	10.6	7.0	3.6
1989	2.7	10.4	8.1	4.1
1990	2.0	17.6	8.3	4.5
1991	-	19.3	8.9	5.3
1992	1.7	21.1	10.0	6.1
1993	4.8	21.4	9.2	6.0
1994	1.4	25.9	11.6	7.4
1995 ^c	-0.2	22.0	16.0	9.6

Source: Central Bank of Chile.

^a As a percentage of GDP.

^b As a percentage of exports of goods and non-factor services.

^c Preliminary figures.

In this context, if it is decided to apply a policy of systematic reduction of inflation through interest rate management, it will be necessary to use a variety of tools in order to achieve a progressive decline in inflation without affecting the medium-term equilibrium exchange rate. With this aim, Chile has applied a combination of policies involving four main elements: intervention with sterilization; gradual real revaluations; disincentives for the entry of short-term capital, and more flexible regulations on capital outflows (French-Davis, Agosin and Uthoff, 1995).

Central Bank *intervention* has been reflected in a big increase in the international reserves (from US\$ 3 billion in December 1989 to US\$ 14.8 billion at the end of 1995). Increases in the money supply associated with the purchase of foreign exchange on the market can lead to levels of liquidity higher than those needed to comply with the official goals in terms of activity and inflation (table 3).

In order to *offset* the monetary effects of the accumulation of reserves, the Central Bank of Chile has resorted to sterilization through open market operations. However, it is well known that this may be limited in its capacity to eliminate the effects of intervention. Insofar as the sale of Central Bank debt paper helps to augment the difference between domestic and external interest rates, full and prolonged sterilization may distort domestic rates enough to attract more capital and, still worse, increase the share accounted for by short-term capital. Sterilization also has quasi-fiscal costs due to the difference between the interest rates obtained by the international reser-

TABLE 4

Chile: Cost of external credit subject to compulsory reserve requirement^a (Annual averages)

	LIBOR	Up to 1 year	Up to 3 years
1991	6.1	7.9	6.8
1992	3.9	5.8	4.7
1993	3.4	5.1	4.1
1994	5.1	7.5	6.0
1995	6.1	9.1	7.3

Source: Central Bank of Chile.

^a Also includes tax on interest.

ves and the rate paid by the Central Bank on domestic sales of its financial instruments.

The process has been accompanied by gradual *real revaluations* of the peso, which have made it possible to relieve the quasi-fiscal pressures deriving from the entry of capital. In January 1992 the "dólar acuerdo" (an official reference value) was revalued by 5% and the floating range of the dollar on the formal exchange market was expanded to 10%, whereupon the exchange rate for the "dólar observado" or "observed dollar" (another official reference value) abruptly fell by 9% (i.e., almost to the bottom of the floating range) due to the revaluation and the flexibilization of that range. Later on, at the end of 1994, the "dólar acuerdo" was revalued by a further 10%.

Since mid-1991 Chile has also been applying *non-quantitative capital controls* (after the style of Tobin, 1978), thus discouraging the inflow of short-term capital. The main mechanism used for this purpose has been a 30% compulsory reserve on the foreign indebtedness of banks and businesses, whose validity lasts only one year (table 4). This compulsory reserve makes it possible to expand the leeway of monetary policy for controlling expenditure through interest rates and reducing the negative impact of sterilization on the inflow of capital. It is interesting to note that the composition of net resource flows into the Chilean economy has changed in the 1990s in the sense that the share accounted for by long-term capital has increased, which is partly attributable to these controls on capital inflow.

Another distinctive feature of Chilean policy on the regulation of capital movements since 1991 has been the measures taken to make the regulations on *capital outflow* more flexible and facilitate the early repatriation of funds in order to relieve the monetary

and exchange-rate pressures associated with the inflow of foreign exchange. To this end, pension funds have been authorized to make investments abroad, subject to a limit which has been gradually raised, amounting to 9% of each fund's resources in 1996, while the range of instruments authorized for such investments has also been broadened.

The regulations on direct investments abroad by Chilean residents have also been made more flexible. Previously, Chapter XII of the Central Bank's regulations laid down that foreign exchange for investments abroad must be purchased on the formal foreign exchange market—where the main agents are the banks—, subject to Central Bank authorization. In April 1991, however, this rule was changed to permit the purchase of foreign exchange on the informal market, without any requirements other than that of informing the Central Bank.

With regard to the financial system, a Bill is under consideration to amend the law on banks so as to permit the extensive internationalization of the Chilean banking system, both through cross-border transactions and by direct investments abroad by banks, through branches or subsidiaries (Larraín, 1995). In addition, laws were recently promulgated which permit the existence of mutual funds specializing in offshore investment funds. These regulations aim to stimulate capital outflows and further diversify the risk spectrum of the Chilean economy.

This process has been based on a high rate of domestic saving, backed up by a policy of fiscal austerity, and on the resources of the private pension fund system (Uthoff and Titelman, 1996). It has thus helped to reduce the upward pressures on interest rates due to sterilization, by discouraging the entry of short-term capital, and to lessen the vulnerability of the economy to reversals of external capital movements. According to preliminary estimates, by 1995 the rate of saving as a percentage of GDP would be 27.4%, of which 27.6% would correspond to domestic saving (table 5). In 1990-1995 external saving averaged around 2% of GDP. For its part, fiscal policy has systematically turned in surpluses. In the years in question fiscal saving averaged 4.4% of GDP per year, with an average global surplus of 1.8% of GDP.

2. Financial aspects

Unlike what happened in other countries of the region, the Chilean banking system was not affected by the reversal in capital flows. Although it is true that

TABLE 5

Chile: Domestic saving and fiscal surplus
(As a percentage of GDP)

	Domestic saving	Public saving	Fiscal surplus
1990	24.2	2.5	0.8
1991	24.1	3.7	1.5
1992	24.8	4.9	2.2
1993	23.9	4.8	1.9
1994	25.4	4.8	1.7
1995 ^a	27.6	5.5	2.6

Source: Central Bank of Chile.

^a Preliminary figures.

this was due largely to the fact that neither macro-economic stability nor growth suffered adverse effects, it is also true that the "depth" and solvency of the financial system have contributed to a sound process of intermediation of capital flows and the maintenance of suitable credit standards for ensuring that the expansion of loan operations is in keeping with the growth of the fundamental variables of the economy.

The experience in credit and financial risk evaluation in a market economy which has been built up over the years by the Chilean financial system and the presence of a strong and highly-qualified banking supervision body—one of the important lessons of the 1982 debt crisis—have allowed the banking system to act as intermediary for the increasing flow of resources associated with external capital, without any deterioration in asset quality or unsustainable increases in loan operations.

In banking supervision schemes, emphasis must be placed on their prudential nature: that is to say, their capacity to foresee problems and take corrective measures before the problems actually materialize. The Chilean banking legislation contains elements which assist in this: the faculty of supervising assets and reserve requirements; the restrictions and drastic punishments laid down for operations with related parties; automatic mechanisms for adjusting net worth when a bank's capital falls below the minimum levels demanded by the regulator; and faculties for freezing the operations of banking establishments, preventing transfers of funds outside the bank, and restricting the payment of dividends by banks which do not meet the necessary levels of capital (Larraín, 1994).

In order for the market to be able to collaborate in the supervision of financial establishments, it is essen-

tial that there should be an insurance system to protect the stability of the payments system and reduce the exposure of the establishments to runs on their funds, although at the same time it is desirable that it should be somewhat limited, in order to give depositors an incentive to evaluate the situation of the banks for themselves. In Chile, there is a total guarantee for sight deposits which is backed up by the Central Bank but which demands that the assets should include certain instruments free of

risk (technical reserve); in addition, there is a State guarantee covering up to 90% of the rest of the deposits, up to an amount of approximately US\$ 3,000.

Transparency of information is essential in order to avoid any form of "cooking the books" and to allow the market itself to supervise the banks' situation. In Chile, such transparency is an obligation under the law, and the regulator has full access to all the information of the institutions.

IV Conclusions

The imperfections which are characteristic of the operations of international financial markets, the changes in the nature of capital movements, and the growing integration of the emerging economies into world markets all highlight the importance of a capital flow regulation policy which can cover the macroeconomic and financial risks connected with the entry of external resources, without losing the benefits associated with them.

In the new institutional context which affects international capital movements, the vulnerability of the emerging economies to reversals in capital inflows has been considerably accentuated, thus reducing the margin for error in economic policy management and the leeway for imbalances in the fundamental macroeconomic and microeconomic variables of those economies.

The strategic objectives of the capital movement regulation policies applied in Chile are, on the one hand, to minimize the distortions that such movements can cause in interest rates, inflation and the exchange rate and, on the other, to prevent the intermediation of capital through the banks from leading to an excessive expansion of credit which can affect the stability and solvency of the financial system.

Among the instruments used in this policy are intervention in the foreign exchange market, together with partial sterilization of the monetary effects of such intervention, and moderate real revaluations of the currency to help relieve the costs incurred by the Central Bank in the sterilization process.

Another component in the regulation of capital movements has been the application of non-quantitative controls to discourage the entry of short-term capital. The aim of this measure is not to distort the

trend values of the economy, but rather to expand the leeway for monetary policy in order to keep expenditure in line with the potential product.

The policy of permitting more flexible arrangements for capital outflows, especially through direct investments abroad by domestic agents and regulation of the operations of institutional investors, is just as important as the foregoing measures. A prominent feature of this policy is the current Bill to amend the law on banks by considerably expanding the external operations of the financial system and permitting the establishment of mutual funds specializing in offshore investments.

The underlying objective of this regulation of capital movements has been the achievement of high rates of domestic saving, which has helped to reduce the vulnerability of the Chilean economy to external capital movements. In this respect, the application of an austere fiscal policy has also been of crucial importance for absorbing the monetary effects of capital inflows and has helped to keep the rate of domestic saving at a high level.

Finally, a central aspect of the policy has been the maintenance of suitable prudential requirements in order to guarantee the banks' capacity to handle the various types of risks. If the banking system has suitable capacity to handle risks, together with the necessary "depth" and flexibility, and if the supervisory authorities are well-equipped and well-qualified, an internationally active financial system will not be adversely affected by an increase in its role as intermediary.

(Original: Spanish)

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Changes in the *industrial development* of Latin America

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Trade liberalization, deregulation of economic activity, the privatization of public-sector production units and much more careful management of the main macroeconomic aggregates are causing profound changes in the behaviour of the Latin American economies. A more competitive climate is gradually spreading through the countries of the region as companies, markets and institutions adapt to a new micro- and macroeconomic scene. This article analyses the various types of modifications in the production structure of the industrial firms of Latin America, the variations in productivity, the systems of incentives and industrial organization, as well as the organization of labour and the trends of the changes connected with the factors of production. Among other conclusions, it is noted that the weight of industry in the GDP is steadily going down, especially since the 1980s, in the context of a reorientation of the region's production structure towards natural resources and services. It is also noted that during the last quarter-century there has been a process of convergence between the region's productivity and that of the United States in the industrial commodities sectors, especially in the transport equipment sector but also, albeit to a lesser degree, in the metal products and machinery sector; in contrast, the productivity gap has widened in the most traditional sectors (textiles, clothing, footwear, etc.), while in the foodstuffs, beverages and tobacco sector it has remained unchanged.

I

Introduction

Trade liberalization, deregulation of economic activity, the privatization of public-sector production units and much more careful management of the main macroeconomic aggregates are causing profound changes in the behaviour of the Latin American economies. A more competitive climate is gradually spreading through the countries of the region as companies, markets and institutions adapt to a new micro- and macroeconomic scene.

A relatively long period of efforts at import substitution, in which firms basically responded to signals from the domestic market, now seems to be coming to an end.

Neoclassical economists have described the achievements of the Latin American countries during the substitution process, as well as the role played by industrial policies in the postwar decades, in pretty pejorative terms. In their view, the active intervention of governments in the field of manufacturing production only served to secure the installation of inefficient industrial plants and to subsidize rent-seeking businessmen incapable of competing on increasingly competitive international markets.

We feel, however, that the results obtained during the import substitution industrialization years were not quite as negative as the orthodox literature suggests. In our opinion, the substitution process led to the establishment and spread of a large number of institutions of crucial importance for the development of capitalism. The expansion of industry brought about the gradual appearance and consolidation of a sophisticated industrial culture (chemical, electrical, mechanical and other industries), as well as the building-up of a vast arsenal of domestic technological capacity. In addition to expanding manufacturing production, many industrial firms and whole branches of activities were generating an important stock of their own technology and know-how which enabled them to raise their labour productivity and international competitiveness, thus closing the gap separating them from the international technological frontier and winning shares in various world markets.

It must be admitted, however, that this maturity process has not been as extensive or thorough as that observed in some Southeast Asian countries, although it undoubtedly has many more positive features than the most orthodox authors have been willing to admit so far.

Whatever our judgment of the import substitution stage, it must be admitted that many of its institutions and much of the public policy agenda associated with them –such as for example the use of customs tariffs to stimulate the construction of factories or even the development of whole branches of industry– have now been abandoned by the Latin American governments, which have been turning instead to the new doctrines of economic liberalization and the deregulation and privatization of production activities, in the expectation that the “invisible hand” of the market will be able to secure a faster rate of modernization and technological change than those attained during import substitution under the direction of the State.

Industrial firms have gradually begun to react to these changes in their operational environment. “Old” forms of organization of production –involving, for example, extensive stocks of parts and components or a high degree of vertical integration– have begun to be abandoned by manufacturers as they learn to use –and adapt to their own needs and circumstances– the organizational principles of “flexible manufacturing” and “just in time” and “zero defect” methods. Greater subcontracting of intermediate inputs and production services, as well as a higher unit content of imports in the respective work programmes, are now routine strategies in manufacturing.

The turbulent conditions of the 1980s are now a thing of the past, and the region is gradually learning to live with trade liberalization and the deregulation of production activities. This transition undoubtedly raises many new questions, such as the following: Is the current production structure of the region different in some way from that observed, say, ten or fifteen years ago, and if so, how? Can the new model

of social organization of production be expected to behave better or worse, in terms of factor productivity, than the import substitution model? What will be the probable impact of the changes in the global scheme of incentives on the various countries of Latin America? What are the new systems of industrial organization that are taking shape in the various countries, and how are the various agents of production (transnational corporations, small and medium-sized firms, family firms, large domestic-owned conglomerates, etc.) adapting to them? What changes are to be observed in the organization of labour and production planning at the individual company level? Are these changes neutral with respect to the various factors, or are there grounds for suspecting that they are skewed towards relative savings of capital or labour? What lessons can be drawn from current trends in the region that could be useful for other countries that are going through similar processes of deregulation and technological change, such as the former socialist countries?

Some of these and other related topics will be analysed in this article. We must begin, however, by recognizing that as yet there is no economic growth theory that provides the conceptual bases for such an analysis. The conventional neoclassical model is based on a number of simplifying assumptions concerning the behaviour of "typical agents" and the typical features of growth in equilibrium which make it difficult or impossible to integrate micro and macro aspects in a really useful manner in any given study of national evolution.

When the production structure, markets and the institutional fabric of a given society pass through a long period of turbulence and thousands of companies close their doors (7,000 in Chile in the 1980s and over 20,000 in Argentina), while many markets partially or completely disappear and institutions undergo dramatic changes in their ends and means, we cannot simply assume that once the dust has settled the same production structure will continue to operate and the economy will return to a situation of long-term equilibrium growth in which the main lines of the model will be only marginally different from those that prevailed before the episode in question.

In such circumstances, many new firms, industries and institutions spring up, whereas others decline or disappear altogether. The capital and labour

markets change in terms of their structure, behaviour and characteristic institutions. Companies begin to use different forms of production organization, and a new public/private mix emerges as regards saving and investment and the financing and provision of public goods such as health services, education, etc. This process involves a change in what French economists have called the "mode of regulation" of society. It seems obvious that in a transition of this type between "systems of regulation" we simply do not have adequate information on what is taking place and we do not have a full understanding of the final nature of the process and the new forms of micro-economic behaviour which are emerging, so that it is not only necessary but even urgent to set about new micro- and mesoeconomic studies to shed light on the problems and opportunities that the new situation is revealing. The aim of the present paper is precisely to set afoot research of this type, taking it for granted that much more basic research will be needed in the future if we are to gain a proper understanding of the new scheme of social organization of production that is currently taking shape in Latin America.

As far as the region is concerned, one thing seems clear. Even though the efforts to secure greater openness, deregulation and privatization of production activity are in some respects similar from one country to another, the changes have been taking place in them in very different ways and speeds. Their results also vary widely, because the dates, sequences and extent of the trade liberalization and economic deregulation measures have been very diverse, as also has been the domestic political support and external financial backing that each country has obtained for its structural reform programme. Furthermore, the macroeconomic stabilization and structural reform measures are being applied by societies that differ greatly from each other in their degree of economic maturity, their institutions and their system of social organization of production. The diversity of the results obtained is therefore hardly surprising.

There is as yet no model or set of models capable of adequately illustrating some of the micro/macro links involved in questions of this type, and much less the complex interdependences that exist between the behaviour of individual economic agents and major changes in public policies in countries at different levels of economic and social maturity. The

whole question becomes even more complicated when we admit the existence of imperfect information among those agents, or incomplete markets. We simply do not know how the various branches of industry should react to changes in interest or exchange rates, or what attitude the various types of companies—with different degrees of access to factor markets and different perceptions of what changes in the regulatory system mean—will take to the new rules. Likewise, we do not know much either about how the various degrees of economic maturity affect the long-term sustainability of the economic liberalization and production deregulation measures.

II

Main basic features of the production structure which is taking shape

To a greater or lesser extent, the main basic features of the production structure which we shall analyse in this section are to be found in all the Latin American countries. However, the highly idiosyncratic nature of each national case must not be forgotten when discussing the long-term behaviour of each economy. Among the most salient features of the new production structure are the following:

i) Manufacturing has ceased to be the driving force behind economic growth, as it was during the import substitution stage. Nor is it an important source of generation of new jobs, and it is not likely to become so again in the future. Natural resources, industries which process raw materials, and non-tradeable activities have now become very important fields for economic expansion and the absorption of labour.

ii) Countries are now much more exposed to international competition than before, both on the import and export sides, and the external sector of each economy plays a much more important role than it did a few years ago. Exports of the industries processing natural resources, foodstuffs and primary commodities are growing fast, but imports of capital goods and labour-intensive products are increasing still faster, thus making the manufacturing trade balance increasingly negative.

In all these respects, we really are without any solid theory to back us up in our assertions. Consequently, in this paper we shall try to work with an inductive approach rather than theorizing *a priori* about what is happening. We shall provide the reader with what Nelson (1995) called an evaluative approach to economic theory from the empirical standpoint: it seems useful to us to know a little more about what we need to posit on the formal level, in order to put future efforts at more formal modelling on the right track. We shall therefore begin by describing some of the main basic features of the new situation which is taking shape.

iii) The degree of economic concentration has increased considerably in the 1990s as a small number of big national conglomerates and local subsidiaries of transnational corporations have taken better advantage of the operating conditions opened up by the new public policies and the new regulatory framework now prevailing in the countries of the region. Small and medium-sized enterprises and public enterprises have been losing their share of manufacturing production and trade as a result of privatization programmes, market flaws, and failure to understand the changes needed in the production organization model in order to survive in the present circumstances. These factors have affected the small and medium-sized firms in particular.

iv) Only a small number of countries in the region seem to have returned to a stable growth path after the macroeconomic upsets of the 1980s. The increases in rates of saving and investment and the creation of new installed capacity seem to have been the decisive factors in the economic growth achieved in such cases. Chile is the clearest example of this type of situation. Some other countries which have also left behind these macroeconomic upsets are still facing various types of uncertainty, however, and their rapid growth in the 1990s was due more to fuller use of their installed capacity and labour-saving

technological changes than to new investments, unlike Chile. Argentina and Brazil are the two most significant examples of this situation.

v) Average labour productivity in the region is still well below international standards, and the available data suggest that the distance between the two levels of productivity –the relative gap– is not being significantly reduced with time.

If, instead of looking at the economy as a whole, we pay more attention to the manufacturing sector, we see the following:

i) Industries that process raw materials –i.e., those producing pulp and paper, petrochemicals, iron and steel, vegetable oils, aluminium, fishmeal, mineral products, etc.– register significantly faster growth than the branches of industry which make intensive use of technological know-how and engineering services (industries producing capital goods, electronic equipment, fine chemicals, etc.).

ii) The 1980s witnessed the entry into operation of a new generation of capital-intensive industrial plants, using continuous processes for the treatment of raw materials and natural resources, which have won a major share of both the overall manufacturing output and the industrial exports of the various countries of the region.

iii) In contrast, there are signs of contraction and decline, along with a high rate of mortality among enterprises, in branches that make intensive use of labour (such as textiles, footwear and clothing) and also in those that make relatively intensive use of engineering services (such as those manufacturing machine tools, heavy engineering products, instruments, agricultural equipment, etc.). In these sectors, firms are having great difficulty in adapting to more open, unregulated conditions of competition and to the use of new technologies based on computerization, typical of flexible manufacturing.

iv) Although the inflow of foreign direct investment declined significantly during the 1980s, such factors as macroeconomic stability and the recent changes in the industrial property regulations prevailing in the countries of the region have set off a new wave of foreign direct investment in manufacturing in various Latin American countries. Strategic alliances between big domestic conglomerates, transnational corporations, world-scale banks and transnational consultants and contractors have been growing rapidly in such activities as the processing of natural

resources, food production, energy generation and distribution, telecommunications, transport and port operation. The privatization of State assets has opened up a wide range of opportunities for such alliances and for the entry of fresh foreign direct investment.

v) The organization of labour at the individual plant level and the degree of vertical integration adopted by enterprises in organizing their production programmes have undergone big changes as a result of the shift towards production systems which are more open to external competition and greater flexibility of labour markets. The high level of vertical integration used in the 1970s is clearly not profitable now that the importation of parts, components and sub-components has become cheaper and simpler. In recent years, many firms producing capital goods or consumer items have significantly increased the unit content of imports in their products, replacing locally-produced parts and components, or even those produced inside the firm itself, with the equivalent imported products. This is dramatically affecting their former suppliers, many of them small and medium-sized family firms in the metal products and machinery sector, among whom the business death rate is currently abnormally high. The big firms have moved towards the “de-verticalization” of their production processes, using external suppliers to obtain services such as computation, maintenance, etc., while at the same time they have reduced their commitments with local product design, production and research and development, resorting instead to greater use of international licences.

vi) A significant difference is to be observed between the results obtained, on the one hand, by those firms which have adopted an active strategy of adaptation to the new circumstances and have consequently invested in new equipment, upgraded the skills of their staff and changed the composition of the goods they sell, and, on the other, firms which have taken a defensive stance and, while making organizational changes with a view to saving labour, have not committed themselves significantly in terms of expanding their installed capacity.

The foregoing is a brief summary description of some of the most salient features of the current situation. In the following two sections, we will analyse the empirical information on which our earlier assertions were based.

III

The global economy and the manufacturing sector as a whole

1. Main features of the restructuring of the production system after the debt crisis of the 1980s

The early post-war years marked a period of rapid expansion of the Latin American economy. Both the level of economic activity and that of gross investment recovered after the long period of restricted access to capital goods and finance caused by the war. The two decades between the early 1950s and the early 1970s may be considered as the golden age of the import substitution-based development model.

Already by the mid-1970s, however, various countries of the region were suffering from a serious slackening in the growth rate of their overall and industrial GDP or their labour productivity, so that they were faced with the need to intensify or reformulate their strategies.

In addition to the loss of dynamism caused by the exhaustion of the import substitution model, they were subjected to serious adverse external shocks. Thus, the two oil crises of the 1970s marked the beginning of serious macroeconomic disturbances in the region which were further aggravated in the 1980s by the debt crisis, the drop in the terms of trade, and the rise in international interest rates.

These changes in the macroeconomic context had varying effects on the different countries, both because of their differing capacities to absorb external shocks and because of the differing policies applied in each case. Generally speaking, however, for the region as a whole one of the main features of the 1980s was the resurgence of inflation, accompanied first of all by stabilization policies and subsequently by structural reform measures, which undoubtedly had a significant effect both on the rate and the nature of the growth process. In the second half of the decade, various countries of the region began to show signs of a gradual (and as yet quite feeble) reversal of these negative trends, but it was only from the 1990s onward that the aggregate indicators –total and per capita GDP, gross fixed capital formation, exports and imports–reflected a clearer process of recovery (table 1).

TABLE 1
Latin America (12 countries): Average growth rates, 1950-1994
(Percentages)

	1950-1974	1974-1980	1980-1990	1990-1994
Per capita GDP	2.4	2.6	-0.8	1.9
Exports	3.9	3.5	5.4	6.6
Imports	6.0	5.7	-0.8	14.4
Gross capital formation	6.2	6.3	-2.8	8.3

Source: Prepared by the authors on the basis of ECLAC data.

In general terms, despite the differences from one country to another, in the 1990s the economies of the region have displayed a noteworthy reorientation towards the exterior and towards more intensive exploitation of their natural resources, which have significantly increased in both quantity and quality. Exports, which had already grown by an average of 5.4% per year in real terms between 1980 and 1990, have attained average real growth rates very close to 7% per year in the 1990s. The region's imports have registered even faster growth, rising from negative annual average growth rates some years ago to values close to 15% per year in 1990-1994.

Notwithstanding the foregoing, however, it should be noted that so far the recovery has been only partial, since the growth rates of total and per capita GDP are still well below those of the 1970s. In 1993, gross fixed capital formation came to 18.1% of GDP, which is not only less than in 1980 but is even below the 1970 figure.

The 1950-1994 period was marked by major structural changes in the composition of the regional GDP (table 2). The tertiary sector (commerce, transport, finance and social services) increased its share, while the other sectors lost relative importance. The performance of the "transport equipment" branch was particularly outstanding, as it grew much more than the average GDP, whereas financial activities and commerce grew rapidly only up to the mid-1980s.

TABLE 2
Latin America: Evolution of GDP, by sectors, 1950-1994
(Percentages)

	1950- 1974	1974- 1980	1980- 1990	1990- 1994
Agriculture	3.5	3.7	2.2	2.4
Mining	4.3	0.9	2.7	3.3
Industry	6.7	4.3	0.4	3.2
Energy	9.1	8.8	5.1	4.5
Construction	5.1	5.9	-2.4	5.6
Commerce	5.9	6.0	0.2	3.7
Transport	6.0	7.6	3.3	6.3
Financial establishments	6.4	5.8	2.2	3.2
Social services	6.2	5.8	2.2	1.5
Total GDP	5.5	5.1	1.2	3.6

Source: Prepared by the authors on the basis of ECLAC data.

The remaining sectors lost relative importance, although their behaviour varied from one sector to another. Outstanding among those that increased their weight in the GDP was the energy sector, which doubled its share between 1970 and 1994.

In contrast, the share of industry in the GDP went down steadily, and its decline became still faster in the 1980s. Although this process speeded up still further in the 1990s, industry had already ceased to be the main driving force behind the region's growth ever since the 1970s, in spite of its high growth rate of 4.3% per year in the period 1974-1980, and it actually suffered a slight decline in its relative weight in GDP.

In the first half of the 1980s, the industrial sector sank into a profound crisis and subsequently stagnated for almost ten years. Its recovery in the first half of the 1990s was less marked than that of the economy as a whole, thus confirming its tendency to lose weight in the regional economic structure.

In the case of the primary sector (agriculture and mining), after having gone through a period in which its share of GDP went down steadily, from 1980 onwards it began to grow faster than the economy as a whole and increased its relative share. This situation tended to undergo a turnaround in the period 1990-1994, however, when the primary sector once again grew more slowly than the economy as a whole.

This behaviour gives an idea of the importance that the drop in domestic aggregate demand due to the stabilization programmes has had as a decisive factor in the crisis of the manufacturing sector. In fact, this drop was much greater in the sectors (industry, construction, commerce) where the in-

come-elasticity of production is greatest. In contrast, during the 1980s the primary sector as a whole grew faster than the other sectors (even the tertiary sector). In this respect, it may be asserted that between 1980 and 1990 there was a clear reorientation of the regional production structure towards natural resources and services.

The sectors connected with natural resources, including both agriculture and mining and the production of industrial commodities, played a particularly important role in the region's new scheme of international economic linkages which took shape from the 1970s onwards (table 3). The expansion of these natural-resource-linked sectors has depended both on the development of "new" products (timber, fresh fruit and fishery products in Chile) and on increases in the physical output of products already exported for decades past: soya beans, sunflower seed and wheat in Argentina; coffee, sugar cane and soya beans in Brazil; coal and petroleum in Colombia; copper in Chile; petroleum in Ecuador; bauxite, tin, iron ore and petroleum in Brazil, and coal and iron ore in Venezuela.

Natural resources have also been a key element in the development of other sectors which have been of great importance in the restructuring of the Latin American economies in the 1980s. These sectors are those producing industrial commodities and some associated services sectors. The subject of industrial commodities will be discussed later. With regard to the associated services, it may be said that, at least to some extent, the great demands for road, port and communications infrastructure associated with the production of primary goods and industrial commodities have been an important factor in causing the "Transport, storage and communications" sector to keep up, after the strong growth registered in the 1970s, growth rates which have been more than double those of overall GDP ever since 1980.

Likewise, the "Electricity, gas and water" sector, which had already grown strongly between 1970 and 1980, has continued to be one of the most dynamic elements in the regional economy, thanks to the energy needs of the new natural-resource-based activities and the discovery of new energy sources.

In short, analysis of the evolution of the Latin American economy since 1970 shows that the first half of the 1970s marked the end of a long phase of growth; in the 1980s there was a severe process of contraction, and it was only in the 1990s that some signs of a recovery of growth began to appear.

TABLE 3

Latin America: Production of selected agricultural and mining goods, 1970-1993
(Thousands of tons)

	1970	1980	1985	1990	1993
Bananas	20 564	21 671	22 270	26 939	27 637
Coffee beans	2 170	2 970	3 839	3 883	3 629
Sugar cane	277 943	356 626	457 703	490 370	454 234
Sunflower seed	1 220	1 756	3 522	4 035	3 432
Maize	38 095	45 280	55 771	50 067	67 999
Soya beans	1 927	19 814	27 167	34 325	36 463
Wheat	11 509	14 874	20 215	20 922	17 295
Livestock products ^a	76	100	107	123	132
Bauxite	24 045	24 596	18 029	29 071	33 739
Coal	10 015	17 626	28 283	34 730	34 064
Copper	987	1 654	1 961	2 237	2 785
Tin	35 588	36 167	47 307	61 900	55 600
Iron ore	88 355	137 647	149 952	187 254	187 934
Petroleum	305 603	334 219	367 265	395 506	428 855

Source: ECLAC.

^a Livestock products: index, base 1980=100.

In the course of this process of decline and partial reactivation of the level of activity, the economic structure underwent some important changes. Industry ceased to play a leading role in the growth process, whereas the primary sector and services displayed greater dynamism, the first-named from the 1980s onward and the latter from the 1970s.

As well as placing a new emphasis on natural resources, the change in the economic structure sharply reoriented production towards the external market, as reflected in a constant and significant increase in the ratio of exports to GDP from 1980 onwards.

This new picture now presented by the region also includes some other elements which are not so positive, however, and which raise challenges that must be faced if we wish to ensure the sustainability of the process of greater openness to the exterior and deregulation of the economy. Firstly, after having fallen sharply between 1980 and 1985 in both volume and value, imports thereafter rose considerably faster than exports. Consequently, after having been notably positive in 1985 and 1990, the trade balance became negative again (at current prices) in 1993. Mexico is a particularly clear example of this, but Argentina and Colombia are also noteworthy examples.¹

¹ From this point of view, the 1994 results were even worse for these countries and indeed for the region in general. Furthermore, as from the last quarter of 1994 there was a notable deterioration in the situation of Brazil, a country which had registered substantial surpluses since the mid-1980s.

Secondly, the expansion of the natural resources frontier involves an increase in the pressure on the environment. The growth model based on more intensive use of natural resources will undoubtedly call for greater care of the environmental equilibrium and, ultimately, faster dissemination of international standards relating to the environment (ISO 14000, the use of eco labels, etc.) as well as new forms of institutional behaviour for handling these issues.

Thirdly, despite export growth rates of almost 7% per year in terms of physical volume, per capita GDP is growing by only 1.9% per year, which raises certain doubts about the ultimate significance of export-led strategies like many of those which have won uncritical acceptance in recent years in the regional economic debate.

2. Structure and behaviour of the industrial sector

a) *The different stages in the restructuring process*

Over the period 1974-1994, Latin American industry passed through various stages in the course of which it registered profound changes as regards its growth rate, its structure and its linkages with the international economy.

As we saw earlier, in the second half of the 1970s the industrial growth rate of the region as a whole went down significantly (table 4), sinking to lower levels than in the 1950s and 1960s. However, the global average conceals very considerable differences between the countries. Thus, manufacturing

TABLE 4
Latin America (12 countries): Average annual growth rates of industrial added value, 1950-1994

	1950-1974	1974-1980	1980-1990	1990-1994
Argentina	4.9	-0.6	-1.4	6.9
Bolivia	3.7	3.4	-0.6	3.3
Brazil	8.7	6.7	-0.2	2.8
Chile	4.4	1.2	2.6	6.3
Colombia	6.7	4.0	2.9	3.9
Costa Rica	8.7	5.5	3.8	5.7
Ecuador	6.2	10.2	-0.8	5.7
Guatemala	6.1	6.1	-0.1	2.8
Mexico	7.4	6.2	2.0	2.3
Peru	7.0	1.8	-1.9	5.6
Uruguay	2.4	4.9	-1.0	-1.3
Venezuela	7.8	5.0	1.9	1.8
Total	6.8	4.6	0.4	3.4

Source: Industrial Growth Analysis Programme (PADI) and data prepared by the authors. The PADI is a computer programme prepared by the ECLAC Division of Production, Productivity and Management to describe and analyse the behaviour of the main industrial variables of the region.

in Argentina, Chile and Peru was already showing the first signs of stagnation in the 1970s, whereas industry continued to expand throughout that decade in Brazil, Ecuador, Guatemala and Mexico.

Faced with ever-greater trade deficits and increasingly sluggish domestic demand, many countries of the region began to employ export promotion policies in the second half of the 1970s, which caused local firms to display increasing interest in external markets.

Industrial exports rose from US\$ 19,262 million to US\$ 41,894 million between 1974 and 1980. Imports increased even faster, however, leading to the deterioration of the region's trade balance (table 5).

As from 1980, and throughout the rest of the decade, industrial production entered a phase of clear stagnation throughout the region, while it contracted sharply in some countries, such as Argentina, Uruguay and Peru. In many cases, the 1990 level of production was below that of 1980.

With the decline in domestic demand, the external sector became the most dynamic demand component. As a reaction to this, many firms reoriented their production towards international markets, and industrial exports grew rapidly from US\$ 41,894 million in 1980 to US\$ 70,407 million in 1990. This time, however, imports did not behave as they had

TABLE 5
Latin America: Industrial exports and imports, 1974-1994
(Values in millions of dollars at current prices)

	1974	1980	1990	1994
Exports	19 262	41 894	70 407	123 442
Imports	28 476	67 284	70 758	163 315
Trade balance	-9 214	-25 390	-351	-39 873

Source: Industrial Growth Analysis Programme (PADI) and data prepared by the authors.

done in the 1970s. As the economic growth rates were much smaller, imports increased only slightly and the trade deficit went down steadily.

However, this improved external situation took place in a context of big internal and external changes which prevented it from lasting very long. Three aspects stand out in these new circumstances: i) the macroeconomic stabilization policies led to sharp falls in domestic demand; ii) the external debt crisis (heightened by the consequent rise in interest rates and the big reduction in the supply of external finance) seriously affected the macroeconomic situation of the region, and iii) the major shifts in the international technological frontier (due to the discovery and rapid spread of new products and production processes based on the use of microprocessors and numeric control) greatly widened the technological gap between the production practices used in the region and the best international practices.

In this context, the industrial sector suffered a profound structural crisis. Domestic demand contracted, and the international competitiveness of many firms and branches rapidly deteriorated. Growth rates in the sector were negative in the first half of the 1980s. Thousands of firms ceased to exist in these years, and unemployment in the region reached unprecedented levels. Only towards the end of the decade did this situation begin to turn around and industry began to grow again. This time, however, the expansion took place within a profoundly changed production structure and a production organization model very different from that which had prevailed in the 1950s and 1960s (we shall return to this subject later).

The first half of the 1990s brought a partial recovery in the growth rate of industrial production, which averaged 3.4% per year for the region as a whole between 1990 and 1994. Although this value was clearly higher than that of the previous decade, it

was still below the rate of 4.6% registered in the 1974-1980 period. In fact, with the notable exceptions of Argentina, Chile, Peru and, to a lesser extent, Costa Rica, the great majority of the countries of the region grew much less than in the second half of the 1970s.

Exports continued to grow, but this time expansion of domestic demand and revaluations of the national currency in various countries of the region led to appreciable increases in imports and a heavy deficit on the industrial sector's trade balance. The partial recovery in production was accompanied by considerable increases in labour productivity (8.0% per year for the region as a whole between 1990 and 1993, compared with figures of 1.6% in 1974-1980 and only 1.0% in 1980-1990).

It is important to note, however, that this improvement in labour productivity was achieved without major new investments (except in Chile) in most sectors of industry. Generally speaking, it was due to drastic cuts in employment made possible by growing technological and organizational changes of a "disincorporated" nature.² In other words, except in the case of Chile the increased labour productivity attained in the first half of the 1990s has been associated with a high level of elimination of labour from the industrial sector. Whereas industrial employment had increased up to 1980 and had gone down only slightly in the 1980s, it fell at the rate of 4.7% per year between 1990 and 1993.

In absolute terms, the level of employment in 1993 was slightly below that of 1974, but over the intervening period production increased by 50%.

All in all, the situation of the industrial sector in the mid-1990s, after the impact of the macroeconomic stabilization and trade liberalization policies of the late 1970s and early 1980s had been overcome, is marked by a renewed capacity for growth in an increasing number of countries and big increases in labour productivity and export capacity.

At the same time, however, industrial imports continue to expand rapidly and to generate a growing trade deficit for the manufacturing sector, especially in the metal products and machinery, electronics and capital goods sectors, whose imports have increased at a spectacular rate since the onset of trade liberalization.

² I.e., not associated with new physical investments.

Finally, another significant aspect is the very limited capacity of the industrial sector to absorb labour.

b) The restructuring of manufacturing activities and the relative increase in the importance of industries processing natural resources

Analysis of the industrial development of the main countries of the region over the period 1974-1994 reveals the relative advance of industries processing natural resources, accompanied by a decline in the branches producing capital goods and consumer durables (table 6). The structure of industrial added value in 1974 reflected a pattern of specialization based on the various branches of the metal products and machinery sector (this includes various branches producing motor vehicles, capital goods, consumer durables, agricultural equipment, etc.). These are industries that make intensive use of engineering design as well as skilled labour for the production and assembly of parts and components.

In the two most technologically advanced countries of the region (Argentina and Brazil), these sectors accounted for around 30% of the total value of industrial production in 1974, while in various other countries (Chile, Mexico and Peru), where the industrial system was not yet as complex, they accounted for between 17% and 21% of total manufacturing added value.

It is important to note the highly special way that the metal products and machinery sector developed in the early stages of the import substitution process.

Starting from quite meagre levels of technological capacity, many small family-type firms gradually managed to expand by copying the designs of outdated foreign products, engaging in "reverse engineering" and supplying their needs with parts and components manufactured by themselves. At the same time, they were building up engineering skills and technological know-how of a "disincorporated" nature which complemented the gradual evolution of their machinery and equipment.

At the most general level, this process meant the gradual development in the region of an industrial "culture" which had not previously existed, and it called for the absorption and spread of practices, quality standards, limits of precision, subcontracting standards, etc. which local firms were not used to employing.

TABLE 6

Latin America (6 countries): Composition of industrial added value, 1974-1994
(Percentages)

Sectors ^a	Argentina			Brazil			Chile		
	1974	1990	1993	1974	1990	1994	1974	1990	1994
I	17.1	14.3	17.6	23.3	22.9	23.6	14.0	10.2	10.2
II	10.5	8.5	13.5	7.7	7.0	8.7	6.9	2.3	2.3
I+II	27.5	22.8	31.0	31.0	29.9	32.3	20.9	12.5	12.5
III	20.3	24.3	21.0	14.6	15.2	14.9	26.0	33.8	36.6
IV ^b	16.1	22.4	16.6	22.3	24.4	25.8	24.9	21.5	19.3
III+IV	36.5	46.7	37.6	36.9	39.7	40.7	50.9	55.3	56.0
V	36.0	30.5	31.4	32.1	30.5	27.0	28.2	32.2	31.5
Total	100	100	100	100	100	100	100	100	100
ISC ^c		0.33			0.27			0.6	

Sectors ^a	Colombia			Mexico			Peru		
	1974	1990	1994	1974	1990	1994	1974	1990	1994
I	9.6	9.6	10.6	13.3	12.3	13.9	9.2	6.2	5.2
II	4.5	4.3	6.9	6.0	9.5	10.8	8.3	5.3	3.6
I+II	14.0	13.9	17.5	19.3	21.8	24.7	17.5	11.5	8.8
III	29.2	31.1	29.0	29.9	25.8	25.7	27.6	31.7	32.6
IV ^b	19.5	20.0	20.8	18.3	21.0	20.8	11.8	13.5	12.6
III+IV	48.7	51.2	49.8	48.2	46.8	46.5	39.4	45.2	45.2
V	37.3	34.9	32.7	32.5	31.4	28.8	43.1	43.4	46.0
Total	100	100	100	100	100	100	100	100	100
ISC ^c		0.33			0.27			0.62	

Source: Industrial Growth Analysis Programme (PADI) and data prepared by the authors.

^a I = Metal products and machinery in general (ISIC 381, 382, 383, 385).

II = Transport equipment (ISIC 384).

III = Foodstuffs, beverages and tobacco (ISIC 311, 313, 314).

IV = Industrial commodities (ISIC 341, 351, 354, 355, 356, 371, 372).

V = Traditional industries (ISIC 321, 322, 323, 352, 361, 362, 369, 390).

^b The figures for Chile do not include the basic copper industry (ISIC 372).

^c Index of Structural Change.

However, this industrial organization model also had many weaknesses which later greatly compromised its long-term capacity to compete in a context of economic openness: these included unsuitable plant sizes, a high degree of vertical integration, the improvised and often artisanal nature of the production plant or workshops, and the imperfect technological information possessed by local businessmen. This became particularly noticeable towards the end of the 1970s, when a new generation of products and production processes associated with numeric control, informatics and the principles of flexible manufacturing began to spread rapidly throughout the world but arrived on the Latin American scene with several years' delay.

The technological lag of the Latin American metal products and machinery firms increased markedly in only a few years, making it more difficult

for them to remain competitive. Trade liberalization aggravated this situation still further.

All the foregoing suggests that although many firms and sectors achieved substantial improvements in productivity and built up appreciable stores of technological know-how in the import substitution industrialization phase, it nonetheless remains true that the Latin American countries have not managed to close the gap separating them from the international technological frontier.

This gap did narrow a little in the most successful period of industrialization (the 1960s and the first half of the 1970s), but it began to widen again when the technological frontier shifted towards numerically controlled products and processes. This was particularly so in the metal products and machinery sector, with the worldwide spread of a new generation of more sophisticated products and processes from the late 1970s onwards.

In this context, some countries such as Argentina, Brazil, Mexico or Colombia decided to further the industrialization process by introducing State subsidies for the expansion and fuller development of sectors specializing in the processing of natural resources, some of which had been established in the 1950s and 1960s but needed significant modernization and expansion by the late 1970s or the 1980s. These State subsidies gave rise to a new generation of industrial plants characterized by their capital-intensive nature and their use of technologies similar to the most advanced ones used elsewhere, in such branches as petrochemicals and the production of aluminium, pulp and paper, steel, vegetable oils, and other goods. This marked the entry into what has been called the "second phase" of import substitution, which included a process of making fuller use of capital, both in terms of the sectors chosen for expansion and the production technologies used.

In Chile, in contrast, the expansion of these branches of production was not due to stimuli of an orthodox nature, although it cannot be denied that some subsidies were indeed made available, as for example in the case of the subsidies for expansion of the forestry base, which made possible the subsequent development of export pulp and paper plants. In this case, the transition to industries processing natural resources was a response to the policy of greater external openness and liberalization of the economy applied by the government from the mid-1970s on.

As a result of these trends in industrial growth, the weight of the foodstuffs and industrial commodities sectors in total manufacturing production rose between 1974 and 1990 from 36.5% to 46.7% in Argentina, from 36.9% to 39.7% in Brazil, from 39.4% to 45.2% in Peru, from 48.7% to 51.2% in Colombia, and from 50.9% to 55.3% in Chile. Even in Mexico, where the weight of the foodstuffs, beverages and tobacco sector is not so great, the share of industrial commodities rose from 18.3% to 21.0%.

In contrast, the relative weight of the metal products and machinery sector went down. In some cases (Chile, for example) the contraction reached dramatic proportions, but in Brazil it was much gentler.

The new plants processing natural resources gave rise to a rapid increase in exports, in which the share of the foodstuffs, beverages and tobacco and industrial commodities sectors grew very markedly: in Argentina, the share of the last-named sector rose

from 12.8% to 25.3% between 1974 and 1990, in Brazil from 7.1% to 35.4%, and in Mexico from 23.8% to 27.8%. In Chile, however, it was the processed foodstuffs industries which increased their share: from 13.8% to 38.0%.

The data also show that in spite of the clear success of exports of industrial commodities and foodstuffs, beverages and tobacco, there was an increase in the trade deficit, especially because of the inability of the metal products and machinery sector to compete with imports on the domestic market. In actual fact, only Brazil managed to improve its trade balance after 1974 and maintain a surplus up to 1994. The big increase in the import coefficients of the other countries bears out this process (table 7).

As from 1990, a further interesting event has been observed: the clear resurgence of the motor vehicle industry (except in Chile).

Thus, many plants in this industry have recently been completely restructured in line with a significant change in the market strategies of the companies involved. After having used in the past a model involving a high degree of vertical integration and self-supply of parts and components, with a considerable effort of adaptative engineering in each plant, the companies are now changing over to a system that uses less vertical integration, more outsourcing of parts and sub-assemblies, and less engineering effort at the plant level. In other words, the industry is moving towards an organizational model closer to the assembly of imported components than to integrated local production.

Together with this phenomenon, another noteworthy development in the cases of Chile, Argentina and Mexico is the contraction in the other activities of the metal products and machinery sector (capital goods, agricultural machinery, machine tools, etc.), which involve a good deal of domestic added value and in-plant engineering and have a strong impact on local technological capacity. Research and development on new products and production processes has declined, and local firms in these branches of industry now seem more disposed to operate as representatives and licensees of international brands than they were a few decades ago.

In Brazil, the destruction of local engineering capacity seems to have been less serious than in the other countries mentioned, but in this case too the general direction of the restructuring process shows various similarities.

TABLE 7

Latin America (6 countries): Import coefficients, 1974-1994

Sectors ^a	Argentina			Brazil			Chile		
	1974	1990	1993	1974	1990	1994	1974	1990	1994
I	10.8	13.7	48.9	22.8	17.0	22.6	119.9	239.2	233.2
II	2.4	4.8	22.8	8.9	6.5	17.9	100.5	231.3	259.8
I+II	7.8	10.3	36.4	18.1	13.8	21.2	114.1	237.5	239.4
III	0.5	0.2	2.8	2.3	3.0	5.7	37.2	5.6	7.4
IV ^b	26.7	8.9	24.1	27.3	7.2	10.7	50.9	60.8	63.8
III+IV	10.5	3.3	10.6	15.9	5.4	8.8	43.5	25.5	26.3
V	2.7	1.9	8.3	3.1	2.8	5.2	15.8	23.3	37.4
Total	7.2	4.1	16.6	13.1	6.7	11.5	48.3	54.4	60.4

Sectors ^a	Colombia			Mexico			Peru		
	1974	1990	1994	1974	1990	1994	1974	1990	1994
I	59.9	97.9	113.4	33.7	71.8	...	93.3	95.9	216.1
II	55.8	44.2	118.8	29.5	30.2	...	29.3	36.9	187.0
I+II	58.5	76.9	115.6	32.0	50.6	...	71.8	71.4	206.1
III	3.4	2.2	5.6	2.5	6.4	...	4.7	5.1	6.1
IV ^b	48.2	45.2	47.1	17.8	20.3	...	29.3	19.7	36.6
III+IV	20.3	18.8	22.9	7.9	12.0	...	13.5	8.9	13.7
V	6.1	6.5	13.1	3.6	8.6	...	3.6	2.3	6.2
Total	20.9	23.9	35.9	11.0	19.1	...	15.8	10.3	19.9

Source: Industrial Growth Analysis Programme (PADI) and data prepared by the authors.

^a I = Metal products and machinery in general (ISIC 381, 382, 383, 385).

II = Transport equipment (ISIC 384).

III = Foodstuffs, beverages and tobacco (ISIC 311, 313, 314).

IV = Industrial commodities (ISIC 341, 351, 354, 356, 371, 372).

V = Traditional industries (ISIC 321, 322, 323, 324, 331, 332).

^b The figures for Chile do not include the basic copper industry (ISIC 372).

c) *The differences among countries in terms of performance and results obtained*

Although this move towards industries specializing in the processing of natural resources has been fairly widespread in the region, it should be noted that the form assumed by this process of structural change has displayed differences from one country to another which are important to bear in mind when appraising the long-term sustainability of the process. Thus, the index of structural change (ISC)³ registers a higher value for Chile than for Mexico or Brazil, thereby indicating that the changes in the production

structure were a good deal more radical in the first-named country. Argentina and Colombia register intermediate values (table 6).

Brazil has been successful, to a greater extent than the other countries of the region, in preserving the metal products and machinery and capital goods sectors that make the most intensive use of domestic engineering and are very important sources for the development of local technological capacity (table 6). In Chile, in contrast, these sectors suffered a clear setback, and a similar setback—rather less marked, but nevertheless significant—was observed in Argentina (the only country which had a metal products and machinery sector at the beginning of the 1974-1994 period that was at a comparable level of development to that of Brazil). In this sense it would appear that, even within a restructuring process with many common features linked with greater exploitation of natural resources and a return to static comparative advantages, the differences between the various national production systems have been growing, and Brazil has maintained, to a greater extent

³ The ISC is an indicator developed by the United Nations Industrial Development Organization (UNIDO) to measure the intensity of changes in industrial structures. It is calculated on the basis of the variations in the relative weight of each sector, between a base year and a final year, in the total industrial added value of a country. Consequently, it does not measure the direction of a given change (i.e., it does not indicate whether a structure has evolved towards industrial commodities or towards metal products and machinery, for example, but only the size of the changes which have taken place).

than other countries of the region, its historical stock of industries with a high engineering content and its accumulated technological capacity.

The external sector indicators also bring out significant differences between countries. Analysis of the import coefficients, for example, reveals some important points (table 7). On the one hand, in Chile and Mexico both the export and import coefficients registered a big increase over the period in question.⁴ On the other hand, Argentina, Brazil and Colombia present us with three different situations. In Argentina, the most important increase was in the import coefficient, whereas Brazil achieved a significant increase in its export coefficient without any major increase in its imports. Colombia, for its part, registered a somewhat smaller increase in its export capacity, accompanied by a rise in its import coefficient, which was already relatively high at the beginning of the period in question. As a result, the manufacturing trade balance of each country behaved differently in each case: it went from positive to negative in Argentina and Chile, registered a notable surplus in Brazil, and suffered a deterioration in Colombia and even more so in Mexico.

IV

Mesoeconomic and microeconomic features of the new industrial organization scene

So far, we have looked at the process of Latin American industrial restructuring in the 1980s at a relatively high level of aggregation, showing that there has been a marked change in the composition of the manufacturing product as a result of the macroeconomic stabilization and structural reform policies applied. Industries which process raw materials have had more success than those that make intensive use of labour or engineering services, and have consequently gained a relatively larger share of the industrial product. The textile, footwear and metal

In order to explain these different results, we must take into account a whole set of structural, macroeconomic and institutional factors (see Bielschowsky and Stumpo, 1996). It is very likely that the high level of complexity reached by the metal products and machinery sectors, the scale of the domestic market and the higher level of protection maintained up to the early 1990s strongly influenced the fact that Brazil maintained an industrial structure more oriented towards dynamic and technologically advanced sectors than the other countries of the region.

Likewise, in Chile—a completely opposite case—the combination of greater trade liberalization with growing appreciation of the currency, a relatively small domestic market, the absence of nearby regional markets of any substantial size, the lack of industrial policies designed to aid capital goods producers, and the availability of abundant natural resources that could be exploited in the short and medium term led to a process of de-industrialization and the orientation of production towards natural-resource-based industrial commodities.

products and machinery branches have been hardest hit by trade liberalization and deregulation of the economy, and their volume of production and level of employment have fallen sharply. The death rate of businesses in these sectors has been unusually high, especially among family-type small and medium-sized firms, as we shall see later in this section.

As noted in the opening paragraphs of this article, while the economic and social restructuring process of the 1980s may be analysed at the macroeconomic level, it can also be examined at a much more disaggregated level, taking account of the changes which have occurred in the structure and behaviour of whole branches of activity, or in the approaches and organization of work of individual firms. At these different levels, a wide variety of stories can be recounted on successes and failures and successful or unsuccessful adaptation to the new

⁴ In reality, differences are also to be observed between these two countries in the following respect: while Chile directed its export effort towards foodstuffs and industrial commodities, Mexico placed more emphasis on automobiles and electronic products. In both countries, however, the main increases in imports are in metal products and machinery.

“regulatory model” for production activity. There is therefore a need for coherence between the macro, meso and microeconomic interpretations of what happened during the process of transition to the new public policy system of the 1990s. In this section we will deal with the meso- and microeconomic interpretations of the events which have been observed.

In order to proceed to these more disaggregated levels of economic analysis, we have selected two special issues on which to centre our arguments. Firstly, the macroeconomic stabilization and structural reform programmes have been far from neutral as regards their effects on firms of different types, as may be seen if we compare their impact on small and medium-sized family-type firms with their effect on domestic-capital conglomerates and local subsidiaries of transnational corporations. Because of the bias of these programmes against public enterprises and their differential impact with regard to companies' access to factor markets (especially capital), the changes in global public policies have in fact acted as a powerful non-neutral selection mechanism which has favoured economic concentration in the countries of the region. Secondly, recent changes in the organization of labour at the individual plant level are displaying a strong labour-saving bias which is affecting both the size and the composition of the employed labour force. In other words, the macroeconomic stabilization and structural reform programmes have favoured economic concentration and adversely affected the capacity of the economies of the region to absorb labour in manufacturing. We shall now consider these two issues in greater detail.

1. The changing roles of small and medium-sized firms, transnational corporations and big local-capital conglomerates in manufacturing

Industrial enterprises normally belong to one of four well-defined groups: i) small and medium-sized enterprises (SMEs), many of them family-owned; ii) large local-capital firms and conglomerates; iii) local subsidiaries of transnational corporations, and iv) public enterprises. Among these groups, there are big differences as regards labour organization models, capital density, access to factor markets (especially long-term capital), and technological capacity, to name only a few aspects. Recent changes in global public policies have been far from neutral in terms of

their impact on these groups, and this has led to significant economic concentration in the sphere of manufacturing.

Let us begin with the first group: the vast universe of SMEs, many of them still family owned and run, which are heavily represented in the production of such goods as footwear, machine tools, furniture or clothing. In all these sectors there was a heavy business deathrate in the 1980s, first as a result of the sharp contraction in domestic demand following the application of the macroeconomic stabilization programmes, and subsequently because of the difficulties these firms have experienced in adapting to a more open economy and a much more competitive climate, subject to the discipline of foreign competition. The SMEs have found it harder to gain access to capital markets because of their lack of acceptable bank guarantees, while they have remained on the sidelines of the technology markets because of their proverbial lack of information. Their perception of the nature of the changes in global public policies has been very imperfect, as also have their efforts to adapt to the new industrial organization model (Mizala, 1992; Boscherini and Yogel, 1996). As they have started off with outmoded production processes and product designs, as well as plants which still retain much of the organization of work used before the recent “flexible manufacturing” revolution and a family-style business and management structure which has found it hard to cope with the complexities of “just in time” and “total quality” organizational principles, many of the SMEs have not been able to survive in the far more competitive atmosphere of the 1990s (Castillo, Dini and Maggi, 1996; Kosacoff, 1993). The sales and purchases of enterprises, forced mergers and a high rate of bankruptcies reveal that among these industries often as many as half of the firms have been forced out of the market.

Of the survivors, many survived simply because they significantly changed the nature of their operations, giving priority to financial and speculative transactions and partly abandoning engineering and production activities (Mizala, 1992). Others, in contrast, managed to survive by becoming subcontractors for big transnational firms (Posthuma, 1995) or retreating into small market niches. Only a few kept going by making substantial investments and significantly improving their plant and technological capacity, retraining their labour force, and profoundly changing their business management principles. In

the 1990s, the most dynamic firms have increased their purchases of foreign equipment and international licences for new products and production processes, gradually adopting various forms of leasing or obtaining franchises from big transnational chains.

The second group—the big domestic-capital conglomerates operating industries that process natural resources such as pulp and paper, vegetable oils, iron and steel or petrochemicals—were able, unlike the SMEs, to make spectacular advances on the regional production scene (Bisang, 1996). In recent years, a large number of new plants—many of them belonging to such conglomerates—have been built which are highly capital-intensive and use technologies very close to the most advanced international practice. These plants have enjoyed generous fiscal subsidies and other forms of public support, especially in Argentina and Brazil (Bisang, Burachik and Katz, 1995). As explained in the previous section, many of these plants were originally intended to satisfy the domestic demand of the countries in question, although not in the Chilean case (Díaz, 1996; Stumpo, 1995); subsequently they had to reprogramme their operating strategies and turn to exports when the domestic market contracted as a result of the macroeconomic stabilization programmes and the installed capacity proved excessive for a domestic market that in some cases shrank to half that originally foreseen. More recently, many of these big domestic-capital conglomerates have entered into agreements and strategic alliances with transnational banks and foreign subcontractors or engineering firms in order to take part in the privatization programmes undertaken as part of the global development strategies of various countries of the region, and their market power has increased still further on the local production scene as a result of these association agreements.

The third group of enterprises to be considered is that of the local subsidiaries of transnational corporations, mainly engaged in the production of foodstuffs, motor vehicles, petrochemicals and pharmaceuticals. The flow of foreign direct investment to the Latin American industrial sector went down significantly in the 1980, when various transnational corporations decided to leave the markets of Argentina, Chile and Colombia (and, to a lesser extent, that of Brazil) because of the contraction of domestic demand and the turbulent economic and social climate. At the end of that decade and the beginning of the 1990s, however,

some of those corporations sought to return to those countries, but this return has often formed part of a globalized transnational operating strategy and has no longer had anything to do with the idea of supplying almost exclusively the domestic markets of the host countries. In view of the progress made by regional integration programmes such as MERCOSUR or the North American Free Trade Agreement (NAFTA), these corporations have given their globalized operating strategies a more permanent nature, and their managements have sought new forms of organization to adapt to those strategies. The privatization of public sector assets and the purchase of debt paper at knockdown prices in the secondary markets for such securities have given old and new transnational corporations ample opportunities to expand their interests in the region and thus increase their relative share in GDP.

The fourth and last group is that of the big State enterprises which have played a leading role over the years in such fields as the oil industry, iron and steel, mining, etc. Many of these enterprises have formed the backbone of the privatization processes carried out in recent years in the region. In many cases, such privatization operations were carried out primarily for short-term fiscal reasons, with the aim of bringing resources into the government coffers. In others—perhaps the fewest—the aim was rather to improve the microeconomic efficiency of the production apparatus by doing away with monopoly situations and trying, through the splitting-up of these enterprises, to give rise to new forms of competition designed to favour the end-users of the services in question. Examples of this are to be found, *inter alia*, in the fields of energy generation and distribution and telecommunications. Chile is perhaps the country which has gone farthest in this direction. It is hard to draw up a final balance on whether this process has been a success or a failure, but what is beyond doubt is that the big State firms have lost considerable weight in the region and their relative share in the global and manufacturing GDP has gone down significantly.

In the 1990s, each of these four major groups of firms has had to face different types of challenges and new opportunities in the light of the changes in global public policies. They have displayed very diverse capacities to adapt to the new set of rules, so that the results obtained have also been very different. Small and medium-sized firms, many of them family owned and run, and the big public enterprises

have lost considerable ground in the region, resulting in a big increase in economic concentration both at the sectoral level and within the global economic activity of each country. Thus, in the mid-1990s 30% or more of the industrial product of each of the countries of the region is controlled by something like a score of big firms which are either domestic-capital conglomerates or subsidiaries of transnational corporations (Paredes and Sánchez, 1996; Bisang, 1996; Obstchanko, 1996).

2. The factor-saving slant of recent changes in the structure of production and the organization of production at the enterprise level

The industrial restructuring process considered so far has taken place in extremely unstable macroeconomic contexts, in the midst of great social upheavals. One of the main features of this process has been the sharp contraction in gross investment, both private and public. The rate of investment in some particular sectors of industry—in branches that process natural resources, for example—has remained significantly high, however, even when global investment has gone down. It may therefore be assumed that the relative weight of the capital-intensive branches of production has grown considerably in each economy, whereas that of the branches that make relatively intensive use of labour or of technological know-how and engineering services has gone down significantly.

The new plants for processing natural resources need few workers. Generally speaking, they are highly automated, their pace of work is set by the basic sub-processes used rather than by the organization of factory labour, they produce a highly standardized set of goods, they do not need much engineering work on product design, and they use practically no unskilled labour (Obstchanko, 1996).

In contrast, the restructuring of production patterns in the industrial branches which make intensive use of labour or of engineering or organization and methods services, such as footwear, clothing, textiles, machine tools and agricultural equipment, has resulted in big cuts in both administrative personnel and factory workers and technicians. The labour-saving effect has become more and more visible as firms have advanced towards less vertical integration in their production processes, greater subcontracting of parts, components and services from third parties, and the incorporation of a greater unit content of im-

ports in their end-products. These processes have led to the introduction of a multitude of “disincorporated” labour-saving changes in technology. Many firms have found that they can produce the same amount of goods, or even more, with half or a third of the previous labour force. Labour productivity has grown significantly, while structural unemployment has begun to be a leading concern in various countries of the region, including Argentina and Brazil (Katz (ed.), 1996). In many countries, this has occurred side by side with a serious weakening of the trade union structure, in the context of a radical change in labour relations and in the behaviour of the archetypal institutions of the labour market. Simplified arrangements for dismissal and flexible forms of hiring have spread considerably compared with one or two decades back.

In general terms, entrepreneurs can be placed in three major categories, depending on their reaction to the restructuring of their plants and their long-term strategies (Kosacoff, 1993). First, there are the “proactive” firms, where adaptation to the new set of rules has meant, among other things, new physical investments, expansion of installed capacity, changes in the range and nature of products manufactured, retraining of staff, and changes in relations with the trade unions. In addition to the industries processing natural resources, to which we already referred earlier, this group also includes the motor vehicle industry, especially in Mexico but also, to a lesser extent, in Brazil and Argentina (Shaiken and Mankita, 1995).

A second quite important category covers firms which have taken a defensive attitude to the changes and have concentrated their response on relative savings of labour through the introduction of a host of “disincorporated” technological changes in the organization of work (Kosacoff, 1996). In both this and the first-named category, the capital/labour ratio has risen significantly (though much more in the first category), as also has labour productivity. The replacement of labour with capital and labour-saving technological changes have played an important role in both types of situations (Katz (ed.), 1996).

However, there is a third—and very numerous—category of firms which have adapted to the new circumstances only minimally or which have not even tried to adapt: in this category, the business deathrate has been and will continue to be extremely high. Inertia, faulty information, and difficulty in

gaining access to factor markets (especially long-term credit) and to technology are the main reasons for these situations. In view of the large number of firms in this category, it can readily be understood why structural heterogeneity has been on the rise in many countries and why substantial sectors of the community feel that the new macroeconomic policies are threatening their survival.

To sum up, there has been an incomplete and imperfect transition to a new model of social organization of production in the region, and this has led to greater economic concentration than in the immediate past, with few new job opportunities. Labour productivity has made very significant advances in

various branches of industry, but the prevailing structural heterogeneity means that the improvements achieved are neither generalized in the sector, nor do they involve the whole of the labour force. All this is taking place in an industrial structure which was very far behind international standards of labour productivity to start with. It can only be hoped that the dynamics referred to will continue to operate and that in time the relative gap between the Latin American countries and the international technological frontier will be closed. However, if this takes place in aggregate terms, what differences are likely to appear between industries? We will consider this question in the following section.

V

The relative productivity gap

In this section, we will explore the question of the relative productivity gap separating the region from the international technological frontier.

One way of studying these convergence processes is to formulate a structural growth model and, on the basis of it, estimate a reduced version for the exogenous variables. This procedure, which has typically been used in empirical studies on what are known as the new exogenous growth theories, assumes that the researcher knows the "true model" and does not fall into specification skews.

Another alternative is to examine the problem on the basis of the study of the stochastic properties of the time series involved, subsequently establishing an interpretative framework for the findings thus obtained; this approach has the advantage that it frees the researcher from the need to formulate an *a priori* causal model, and it has also shown a capacity of prediction superior to more conventional approximations (Dickey and Fuller, 1979; Doornik and Hendry, 1994).

If we take this latter path, then after studying the degree of integration of the series and identifying their stochastic generation process we must seek a stationary presentation of them and, through the corresponding estimates by recurrent least squares, together with sequential Chow tests, we must proceed to identify the structural breakpoints in both the levels and the trends of each series.

This was the method applied here to the labour productivity of Latin America and of the United States in the following fields: total manufacturing sector; foodstuffs, beverages and tobacco; industrial commodities; machinery and equipment, and traditional industries. The tests of the order of integration of the series were based on Dickey-Fuller tests increased with variable lags for each series and a deterministic trend. In no case was it possible to reject the null hypothesis that the series are first-order integrates. Studies were then made in terms of growth rates of labour productivity. The results obtained for the estimation of model 1 are presented in the following paragraphs.

Model 1

$$D\ln(Q/L)_{ijt} = \alpha + \beta \text{Trend} + \sum_{h=1}^K [\gamma_h D_{ijh} + \delta_h (D_{ijh} * \text{Trend})] + e_{ijt}$$

where:

- i = sector
- j = region (Latin America or United States)
- D_{ijh} = dummy variable which has a value of 0 or 1 depending on whether or not there is evidence of structural change in period h
- K = number of possible structural changes identified
- e_{ijt} = $N(0, \sigma^2)$.

1. Closing the gap or losing ground? The experience of the 1970s, 1980s and 1990s

Figure 1 shows the results obtained for manufacturing as a whole when comparing the labour productivity of Latin America with that of the United States between 1975 and 1995. The top left segment of the figure shows the logarithms of labour productivity in the two regions, while the top right segment shows the same series, but superimposed so as to adjust the measurements of the series to simulate identical starting conditions. Finally, the lower segment shows the evolution of the productivity growth rates and identifies the discontinuities in each series.

In general terms, around 1970 Latin America had a level of industrial labour productivity which was only 26.5% of that of the United States. Subsequently, a process of convergence began which coincided with the oil crisis and with an absolute drop in United States productivity which lasted until 1983. Meanwhile, the region continued to grow at close to 2% per year, without showing any signs of the adverse effects of the oil crisis: this is typical of closed economies in which the State, through its control of the currency, takes action to cushion the volatility of external prices, often financing this action with the inflation tax.

The convergence process then came to an end when the United States recovered a higher growth rate in the mid-1980s. Although the region also recovered a little with the loosening of external constraints (due to the debt crisis) and the structural changes of the early 1990s, this has had only transitory rather than permanent effects on the growth rate of Latin American productivity: there was really just a one-time leap forward which brought the region closer to the international frontier but was not sustained over time. As a result, by the end of the 1974-1994 period the convergence was virtually insignificant and Latin American productivity was still only 27.2% of that of the United States.

2. The productivity differential, by major sectoral groups

This section will analyse the sectoral differences in labour productivity between Latin America and the United States. Figure 2 shows the behaviour of the foodstuffs, beverages and tobacco industries. It will be noted that in Latin America this sector displays

great stability (its productivity grew by less than 2% per year during the period 1970-1994). In the United States, in contrast, the sector shows the heavy impact of the mid-1970s crisis, when productivity growth slackened by six percentage points; this situation was reversed as from 1983, but the rates became smaller and smaller, reaching a level of around 3% per year by 1994. This pattern reflects a convergence process similar to that of industry as a whole, with a gap that closes somewhat from 1974 onwards, but grows steadily wider as from the second half of the 1980s. The net result is that Latin American productivity in this sector has remained at about 22% of the United States level.

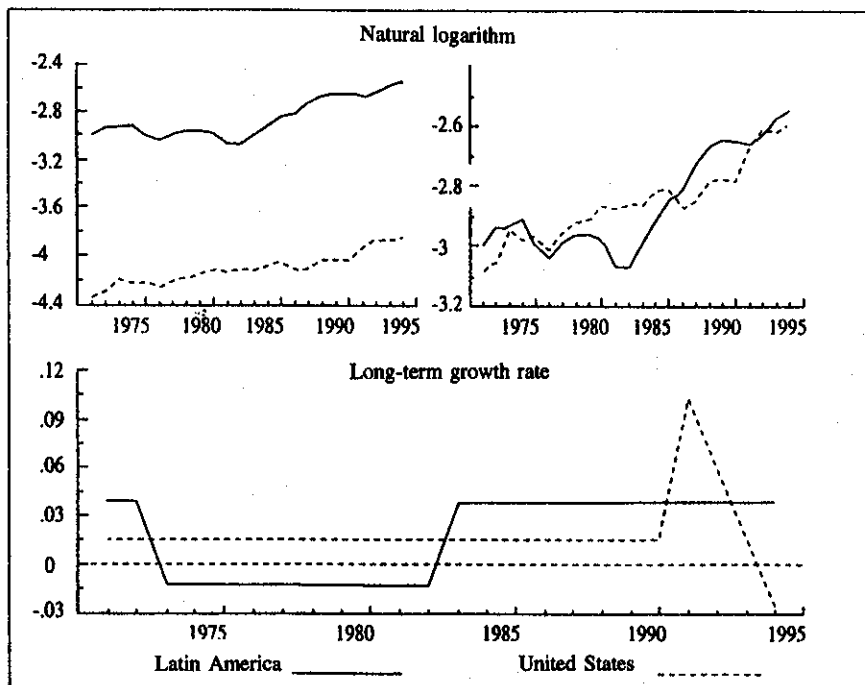
In the case of the traditional industries (textiles, clothing and footwear), productivity grew over the period 1970-1994 at a rate of a little under 2% per year. Unlike the preceding case, however, productivity in these industries took an upturn at the beginning of the 1990s, but this could not be maintained, and the period under analysis ended with a downward trend. In contrast, the United States reacted to the 1970s recession with a slump of six percentage points in the growth rate (accompanied by a drop in productivity), but its traditional sector recovered much more rapidly than the foodstuffs, beverages and tobacco sector, which stagnated for a longer time. This means that the convergence was much less marked and the Latin American traditional sector suffered a setback in relation to the United States, declining from a relative efficiency level⁵ of 27.5% to one of 22.5% (figure 3).

The Latin American industrial commodities sector, for its part, behaved in a stable manner throughout the period, with a growth rate of around 3% per year. This rate is clearly superior to that of the United States (1.5%), thereby making possible a consistent convergence process which was heightened by the crisis of the sector in the United States from the late 1970s until the early 1980s. In the latter country, the sector showed a vigorous recovery, but this could not be maintained (perhaps it merely reflected the recovery of under-utilized installed capacity), and it has stagnated up to the mid-1990s. In net terms, the region consistently narrowed the gap, with its relative efficiency rising from 33.3% in 1970 to 45% in 1994 (figure 4).

⁵ This is the ratio between the labour productivity of Latin America and that of the United States.

FIGURE 1

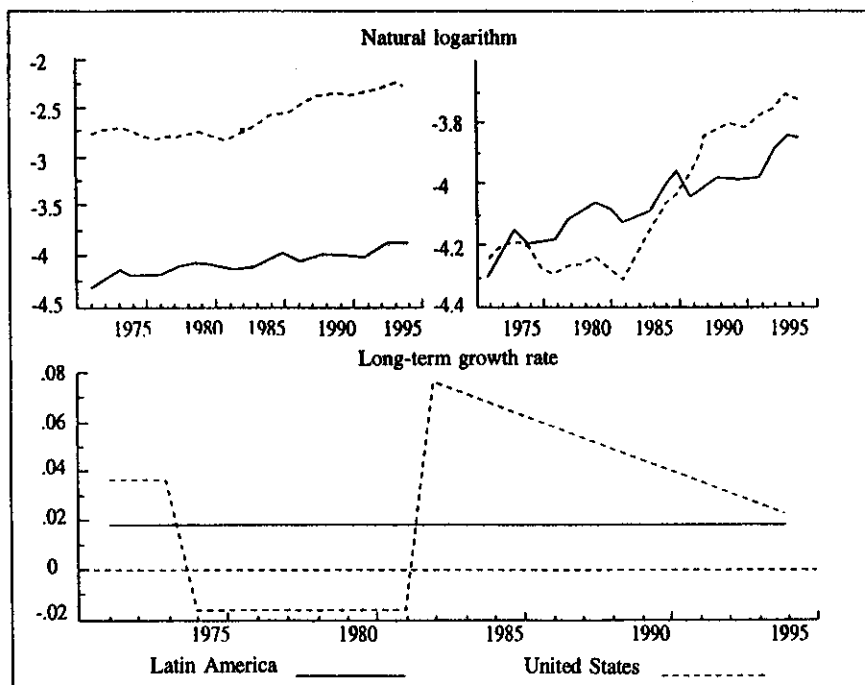
**Latin America and United States: Labour productivity
in the manufacturing sector as a whole, 1970-1994**



Source: Prepared by the authors.

FIGURE 2

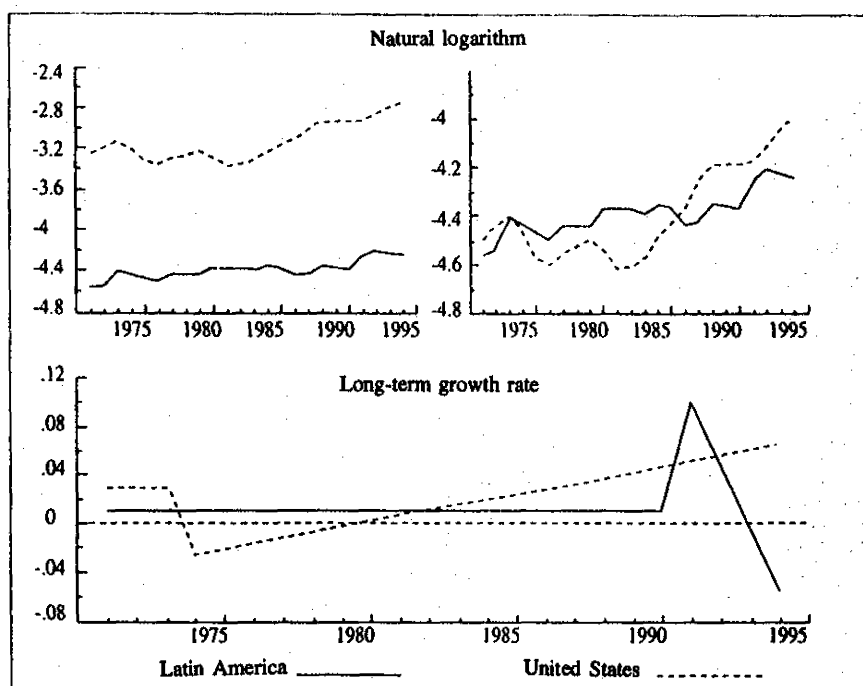
**Latin America and United States: Labour productivity
in the foodstuffs, beverages and tobacco sector, 1970-1994**



Source: Prepared by the authors.

FIGURE 3

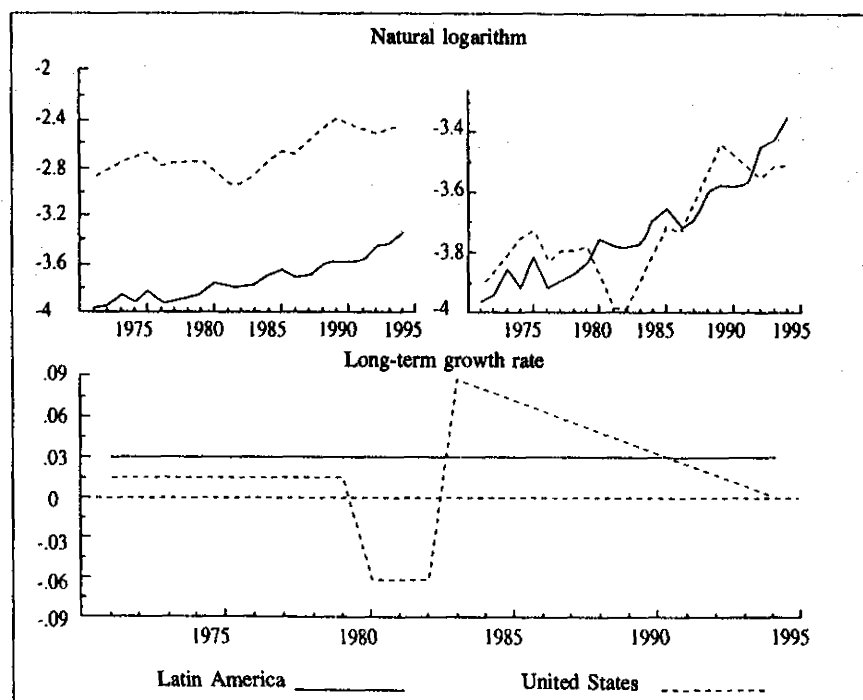
Latin America and United States: Labour productivity in the traditional industries sector, 1970-1994



Source: Prepared by the authors.

FIGURE 4

Latin America and United States: Labour productivity in the industrial commodities sector, 1970-1994



Source: Prepared by the authors.

Finally, in the metal products and machinery and transport equipment sectors Latin American and United States productivity levels have tended to converge (figures 5 and 6), but as the initial gap was bigger in the case of transport equipment, the rate of convergence is higher in the motor industry than in the metal products and machinery sector. Among the factors contributing to the narrowing of the gap, the 1970s crisis once again played a significant role, as it caused United States productivity growth to slacken by eight percentage points in both sectors, whereas Latin American productivity has continued to grow at its historical rate of 3% per year for the transport equipment industry and 1.7% for the metal products and machinery sector. In the case of the latter sector, however, there was a "permanent" change in its productivity in the first half of the 1990s, so that it rose above the

United States trajectory and thus narrowed the sectoral gap more markedly.

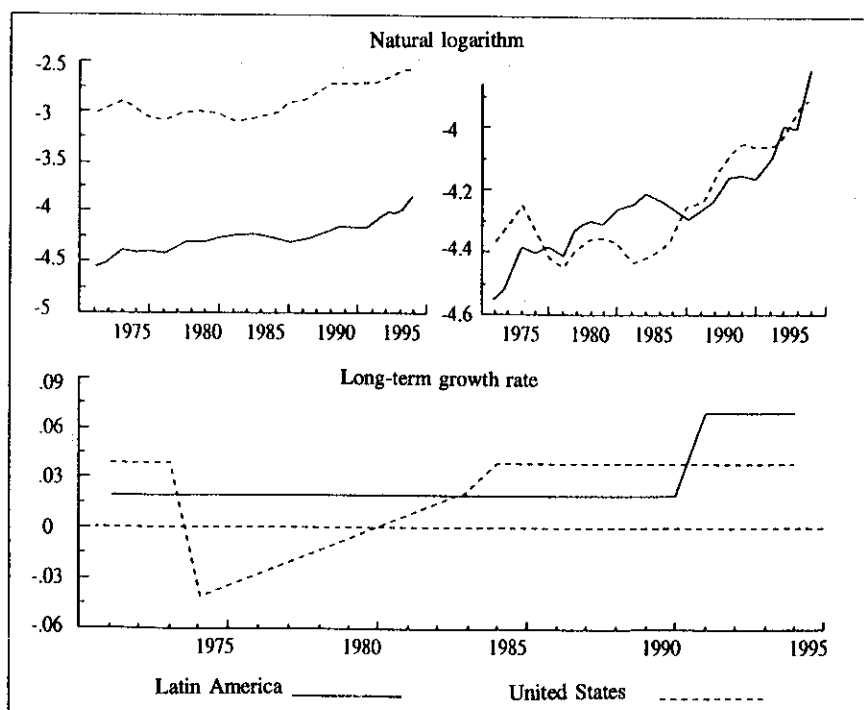
To sum up, if we look at the variations in the labour productivity of various industrial activities in Latin America and the United States, we see that between 1970 and 1994 there has been a process of convergence in the industrial commodities sector and in that of transport equipment (especially in the motor industry). Less striking, but none the less important, progress was made by the metal products and machinery sector, which has narrowed its relative gap by around 28% (table 8).

In contrast with these "successes", there has been a significant relative loss of productivity—widening of the gap—in the so-called traditional sector. The foodstuffs, beverages and tobacco sector shows no change over the period as a whole.

(Original: Spanish)

FIGURE 5

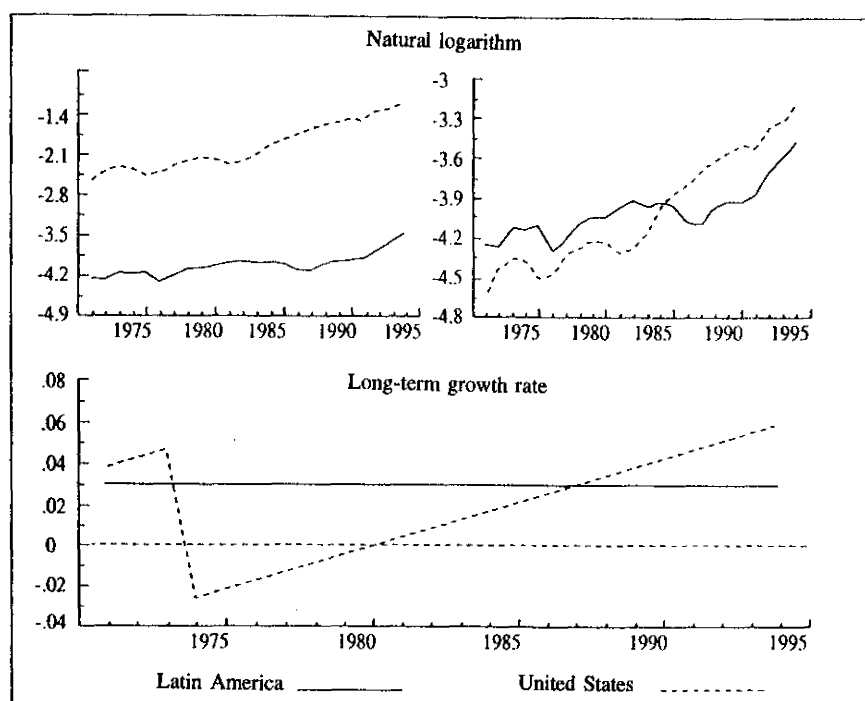
Latin America and United States: Labour productivity in the metal products and machinery sector, 1970-1994



Source: Prepared by the authors.

FIGURE 6

**Latin America and United States: Labour productivity
in the transport equipment sector, 1970-1994**



Source: Prepared by the authors.

TABLE 8

**Latin America and the United States: Relative labour productivity of the two
regions in selected sectors, 1970 and 1994**
(Percentages)

Sectors	Initial efficiency (1970)	Final efficiency (1994)	Percentage variation between 1970 and 1994
Foodstuffs, beverages and tobacco	22.3	22.3	...
Traditional industries	27.5	22.5	-18
Industrial commodities	33.3	45.0	35
Metal products and machinery	22.3	28.6	28
Transport equipment	16.5	23.4	42

Source: Prepared by the authors.

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Pension system reforms *in Latin America:* the position of the *international organizations*

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This article analyses the position taken by various international and regional organizations regarding pension system reforms in Latin America. Over the last ten years, these organizations have carried out studies on almost all the Latin American countries (although on only a few in the English-speaking Caribbean), identified and analysed key aspects, compared the reforms made, evaluated their advantages and disadvantages and developed global strategies or sets of desirable features for ideal types of reforms. The author identifies a number of the main alternatives or issues in the social security debate, makes a general classification of the pension system reforms carried out in the region, and after describing a hypothetically universal model he analyses its real viability. He notes that most of the Latin American countries have institutional factors which differ from those of Chile, on whose experience the model is based, so that its integral application elsewhere would be more difficult. He then goes on to summarize and compare the strategies proposed by the International Labour Organization and the World Bank, and analyses the Latin American reforms in their context. After summarizing the actions taken by the International Social Security Association and the Inter-American Development Bank with regard to these matters, he analyses the ECLAC proposal. His conclusion is that while on the one hand rigid and excessively general strategies are difficult to apply in practice, on the other hand it is necessary to eschew ad hoc designs which ignore the lessons of experience. The best approach would be to develop a classification by groups of countries which share common features in terms of institutions and social security, and on its basis prepare a general reform model for each group.

I

Introduction

During the last six years, the most frequently discussed social policy issue in Latin America has been social security pension reform, and this discussion is likely to become even more intensive in the rest of the decade. The issue is important not only in the region but also worldwide, and the reforms carried out in some Latin American countries (especially Chile) are being put forward as models in other regions, particularly Eastern Europe, and even in some industrialized countries, such as the United States. For over ten years the field was dominated by the supporters of the Chilean reform model, who extolled it as the unique and universal solution. The international financial and technical organizations did not develop a strategy or detailed set of proposed features in this respect until 1993-1994, when the International Labour Organisation (ILO) and the World Bank published their reports on the subject (ILO, 1993; World Bank, 1994).

The other two international organizations which have analysed this issue at the regional level are the International Social Security Association (ISSA) and the Inter-American Development Bank (IDB), but neither of them has prepared detailed sets of desirable features or systematic comparative studies of pension system reforms. Between 1991 and 1994, ECLAC sponsored diagnostic or analytical studies of reforms and proposals in 16 countries of the region, and in 1995 it published a document summarizing, comparing and integrating all these studies, which differs from the ILO and World Bank reports in that it deals exclusively with the region (see section VII below).

The author of the present article has devoted himself for the last 40 years to studying social security in Latin America, and he has prepared both regional and national-level studies (in 15 countries), as well as working as a consultant for almost all the organizations mentioned, introducing the subject for the first time in two of them. Against this background, his aim in this article is to summarize, compare, integrate and appraise the work of those organizations on pension system reform (particularly in the region), to identify the advances made by them and their points of agreement and disagreement, to clarify the central issues in the debate, and to offer some guidelines for further progress in this field.

The article begins by identifying a number of the main issues in the debate (section II). It then sets forth a classification of the types of pension system reforms carried out in Latin America (section III). This is followed by a description of the position taken by the supporters of a supposedly universal model, and the viability of the reproduction of this model in the rest of the region is analysed (section IV). Section V summarizes and compares the sets of desirable features, forming three fundamental pillars, proposed by the ILO and the World Bank and situates the Latin American reforms with respect to them. Section VI summarizes the work of two other international organizations (the ISSA and IDB) at the regional level. Section VII analyses the ECLAC document referred to earlier, and finally section VIII suggests some possible future actions.

□ The preliminary version of this study was circulated to officials of all the organizations concerned, as well as to academics specializing in this subject. The author naturally bears exclusive responsibility for the views expressed herein, but he wishes to express his thanks for the valuable comments or contributions made by Francisco León, Joseph Ramos and Andras Uthoff (ECLAC); Alfredo Conte-Grand and Carmen Solorio

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II

The main issues of the debate

This section identifies and summarizes the most important issues of the pension reform debate, presented in the form of six pairs of alternatives. The main contenders in the debate are the ILO and the ISSA on the one hand (Beattie and McGillivray, 1995, pp. 7-28) and the World Bank on the other (World Bank, 1994, and James, 1996). Analysis of some of these pairs of alternatives or dilemmas reveals that some of them are false or have been presented in a superficial or incomplete manner.

1. Social objectives vs. economic objectives

Traditionally, the objectives of social security pension systems ("public" pensions) were of a social nature: maintenance of income in old age or in the event of sickness or death (survivors' pensions), solidarity among population groups or generations, etc. This issue was dealt with by international technical experts (ILO, ISSA), national pension fund managers, lawyers and actuaries. Although economists occasionally intervened in the matter and macroeconomic aspects were dealt with, these were not of fundamental importance, at least up to the 1980s.

The crisis in social security and in the economy in general, combined with the effects of the structural adjustment programmes, aroused the interest of the international financial organizations (the International Monetary Fund (IMF) and the World Bank first, followed later by the IDB and ECLAC), and economists began to play an increasingly important role in this area. The latter brought in economic and financial objectives, alleging that public pension systems suffer from serious defects such as high rates of contributions, evasion and arrears, inappropriate allocation of fiscal resources, inefficient investment and waste of opportunities for increasing saving, heavy and growing pension system debts, encouragement of fiscal deficits and inflation and, because of all this, a negative impact on economic growth, productivity and employment. The replacement of public systems with private ones (with other attributes that will be

explained later), they claimed, would eliminate these problems and increase national saving, the capital market, the real return on investments, economic development and the generation of employment, all of which would in turn ensure suitably high and equitable pensions.

Both the ILO and the ISSA argued that the risks involved in such reform would be greater than the present ones, including such problems as social uncertainty (because the level of the pensions would depend on unpredictable macroeconomic factors such as inflation, the return on capital and the performance of GDP), the complexity of the decisions that insured persons would have to take (what kind of pension to choose when they retired), minimum pensions insufficient to cover basic needs, the introduction of sex-based inequalities in pensions, and the imposition of a double burden on present contributors (in order to finance their own pensions, plus the deficit caused by the change in system). All these problems may be observed in Chile, which is the only country in the region that has carried out this type of reforms. Furthermore, these organizations maintain that the impact of public systems on the economy, productivity, national saving and employment is non-existent or extremely slight.

Whereas Beattie and McGillivray (1995) hold that pension system reforms and economic reforms (structural adjustment) should not be mixed up in the debate, and that the public systems cannot solve the problems of underinvestment and low economic growth, James (1996) considers that the two types of reforms cannot be separated. Despite this apparently insoluble disagreement, the ILO (1993) has begun to take into account some of the economic objectives, while the World Bank (1994) is including social aspects such as equity. The ISSA maintains a stronger position in terms of the leading role that social objectives must play. As yet, there is no conclusive proof that these two types of objectives are either mutually exclusive or mutually supportive, and the debate therefore continues.

2. Amelioration vs. structural reform

James considers that both sides are in agreement regarding the defects of the public system, but disagree over the solutions for them. In contrast, while Beattie and McGillivray (and also the ILO, 1993) acknowledge many of these defects, they reject the World Bank's view that the public systems have failed. In order to refute that opinion, they offer examples of European countries where such systems successfully continue in operation, with the support of the population, but the World Bank retorts that such countries are few. Both sides agree on the need for reform, but, owing to their disagreement on objectives and diagnosis, the types of changes they propose are different. The ILO and the ISSA favour amelioration of the existing systems (i.e., non-structural reform) in order to correct their faults by such means tougher entitlement conditions (for example, by raising retirement age), eliminating special privileges, providing less generous benefits, reducing administrative expenses, and exercising more effective controls over evasion and arrears. The World Bank, however, while deeming these measures positive, considers them to be insufficient for solving the basic (economic) problems in the long term and therefore proposes radical (structural) reforms involving the replacement of the public systems (later on we shall look at some structural reforms which do not involve the elimination of the public systems).

3. Pay-as-you-go vs. capitalization

Pensions can be financed through the methods of pay-as-you-go (PAYG) or capitalization; the latter method may take various forms such as fully funded or partial, and individual or collective capitalization. In a simple PAYG method (without the establishment of reserves), the contributions of the current contributors finance the pensions already being paid, while future generations, in turn, finance the pensions of the current contributors; contributions have to be increased as the system matures and the population grows older, and the State often has to finance growing deficits (a variation of PAYG includes a small contingency reserve fund to deal with unforeseeable short-term problems). In this method, there is solidarity between generations, and there can also be solidarity within the same generation, through transfers of resour-

ces from the higher-paid insured to the lower-paid ones (although legal provisions in this sense are not always applied in practice). Fully funded individual capitalization (FIC), in contrast, is based on a uniform but indefinite premium (contribution) and the insured (present and future) finances his own pension by depositing his own contributions (and in some cases those of his employer) in an individual account. The funds in this account are invested, and the return on the investment is added to the account. This system does not offer any form of solidarity, since there is a strict relation between the contributions made and the benefits received.

The World Bank and the supporters of the Chilean model have clouded the issue by making a simple dichotomy between PAYG and FIC methods ignoring the intermediate methods of partial collective capitalization (PCC), usually based on scaled premiums (SP). Under this system, reserves are built up to pay pensions over a given period (say, 15 years). These reserves are invested and must give a suitable return, together with the contributions, to fulfill the commitments for the period. By means of periodic actuarial studies, it is calculated whether the current contributions are sufficient to ensure the payment of pensions in the following period, or whether such contributions must be increased (which is usually the case). The method is collective, not individual, because it is necessary to practice solidarity in order to pay minimum pensions to low-income contributors, but individual accounts must be maintained for the insured persons, because the pension must bear a relation to the number of years worked and the contributions made during that time. The scaled-premium method has some features of PAYG (intergenerational transfers, solidarity and increasing premiums, although these increases are more infrequent and gradual than in PAYG) and also of FIC (reserves which are invested, individual accounts, and some degree of relation, although much less marked between contributions and benefits).

James acknowledges that the effects of PAYG on national saving are debatable, and that there is no proof that such a method leads to reduced saving, but she asserts that the FIC method does indeed have a positive impact on the capital market and national saving. When the domestic market is not capable of absorbing the entire flow of capital of the pension funds, part of this flow can be invested abroad, which also helps to diversify the risks. All this is subject to

three conditions, however: i) the government must not take advantage of the funds for its own purposes; ii) there must at least be a rudimentary capital market before the FIC method can operate, and iii) strict State regulation is needed in order to prevent excessive risks and fraud.

The response of the ILO and the ISSA to this is that there is no convincing proof that the FIC method has a significant impact on national saving in developing countries, and furthermore it is very difficult to develop efficient capital markets in such countries; moreover, liberalization of investment of pension funds abroad could encourage capital flight and provoke a drop in domestic saving. The World Bank, for its part, acknowledges that in the long term there could be a saturation of the international capital market, which would lead to a decline in the return on the capital invested. Another problem is that evaluation of the impact on national saving should not be limited solely to the FIC-based system but should extend to pension system reform as a whole (which, as we shall see below, causes a deficit in the old public system and a surplus in the FIC system). Various studies on Chile have shown that the net balance of the reform is negative, and it does not have a significant impact on national saving. Furthermore, although Chilean law allows up to 9% of the resources of pension funds to be invested abroad, in actual fact only 0.3% is invested in this way. Finally, most of the Latin American countries either do not have a capital market, or else it is very weak and unregulated (Mesa-Lago, 1994a, 1994b and 1996).

4. Defined benefits vs. defined contributions

In public pension systems, the benefits are defined by law, whereas the contributions are not defined, because they increase in PAYG systems and those based on scaled premiums. If the system works well, it has the advantage that the insured knows how much pension he will receive and there can be solidarity in terms of costs and benefits. The World Bank points out, however, that in many countries the pension legislation is not enforced and the real value of pensions has gone down, although at the same time contributions have risen to unsustainable levels, encouraging evasion, arrears and under-declaration of income. These problems, the Bank claims, would be avoided with FIC and defined contributions (there would be no solidarity within the system, but there

could be solidarity outside it). If an insured person were to evade payment of his contributions, fall into arrears or under-declare his income, then he would lose his pension or reduce its amount, but this would not adversely affect either the system or the other contributors. The Chilean experience does not bear out most of the World Bank's assumptions, as about half the insured persons do not contribute actively to the system (this is also the case in Argentina, Colombia and Peru): low-income insured persons apparently minimize their contributions so that the State will maximize its subsidy to their guaranteed minimum pension. If this is true, then the fiscal cost will be much greater than anticipated (Beattie and McGillivray, 1995, pp. 7-28).

5. Public vs. private management

The World Bank claims that private management is better than public management, because the competition among private pension fund management companies to attract members increases efficiency, reduces administrative costs, and maximizes the investments return, provided there is due access to information, clear and open business practices and a suitable regulatory and supervisory framework. It acknowledges, however, that because of the compulsory nature of the system (and especially in countries where the number of insured persons is not very large) concentration may take place. The ILO and the ISSA add that mere access to information does not guarantee that insured persons will be capable of taking rational decisions, especially when the information and options are complex. The Chilean experience confirms these points, since some 69% of the total number of insured persons are concentrated in only three of the 16 pension fund management companies, because insured persons do not choose the companies in the light of their low commissions and high yields, but largely do so thanks to publicity campaigns and the efforts of the pension fund salesmen, who earn a commission for every new member or transfer they can arrange. Furthermore, in developing countries the establishment of a supervisory body calls for the hiring of highly qualified staff who are not easy to find. Finally, the "private" nature of the system has been questioned in view of the existence of four key functions which are assumed by the State: the compulsory nature of membership in the pension funds, strict regulation and supervision, the heavy subsidies and

transfers involved, and the guarantees provided in the event of bankruptcy, as well as other fundamental elements of the system –aspects which will be dealt with later in this article (Gillion and Bonilla, 1992, pp. 171-195, and Mesa-Lago, 1994b).

6. Sensitivity to political pressures vs. political immunity

The World Bank asserts that the system it supports will be free from political interference and manipulation because the insured person is the owner of his individual account, while the funds are privately managed. It admits, however, that no system is completely immune to these problems, and the system will therefore work better if the government “behaves itself”. It rejects the viability of non-structural reform of the public system, because of the resistance this would meet from politicians and interest groups (James, 1996). In Latin America, however, central governments usually have not “behaved themselves”

with regard to social security, and the crisis of the social security system is partly due to this. An autonomous supervisory body will have a great deal of power, and in developing countries with a low level of education there is a strong risk that the most highly-qualified officials of such a body will take advantage of their knowledge and influence to “feather their own nests”; on the other hand, if the officials are not highly trained the regulatory and supervisory framework will be feeble. Furthermore, inasmuch as the system needs a strong role for the State, this will open up possibilities for government pressure. It would be easy to imagine the possibility of such pressure if the level of pensions (for example, the minimum pension) were insufficient to meet the basic needs of most pensioners, or if the investments made by the pension funds adversely affected fiscal and monetary policy (Beattie and McGillivray, 1995, pp. 7-28). Finally, the political obstacles will be greater in the case of structural reform than in that of the mere amelioration of the existing system (see section IV below).

III

Typology and features of pension system reforms in Latin America

Up to the end of 1995, seven Latin American countries had made reforms in their social security pension systems. Two of them had made non-structural changes which retain the “public” system based on scaled premiums, with some measures to improve this system (Costa Rica), and which also introduce a compulsory programme for saving or for a supplementary pension (Mexico, although in fact in late 1995 this country approved the main lines of a structural-type reform process). The other five countries had made structural reforms which either i) close down the public system (mostly based on PAYG) and replace it with a private system, run by private companies whose activities are restricted solely to this field, and based on FIC (Chile); ii) set up a mixed system which must integrate two programmes: one of them a reformed public programme based on PAYG, and the other an FIC system managed by public or private institutions (Argentina

and Uruguay); or iii) establish a parallel or selective system in which the public programme, based on scaled premiums, is maintained (reformed in Colombia and retained without any major changes in Peru) and the insured persons are allowed to choose between that programme and a new FIC programme, either run in the same way as in Chile (Peru) or operated by various types of management institutions (Colombia).

Table 1 gives a broad classification and summarizes the main features of the reforms in the seven countries in question. As of early 1996, there were at least eight other countries of the region which were either studying pension system reform or considering a bill in that respect: Bolivia, Brazil, Ecuador, El Salvador, Guatemala, Panama, Paraguay and Venezuela (the Mexican Parliament was discussing the Act and regulations for its structural reforms, which are not due to come into force

TABLE 1

Latin America (seven countries): Typology of pension system reform, 1995

Features	Argentina	Colombia	Costa Rica	Chile	Mexico ^a	Peru	Uruguay
I. Date and political regime							
Year legislation adopted	1993	1993	1990-1992	1979-1980	1991-1992	1992	1995
Entry into force of reforms	July 1994	September 1994	1990-1992	May 1981	February 1992	May 1993	March 1996
Political regime	Democratic	Democratic	Democratic	Authoritarian	Dominated by a single party	Coup d'état, Parliament dissolved	Democratic
Type of legislation	Act of Congress	Act of Congress	Act of Congress	Presidential Decree-Law	Act of Congress	Presidential decree	Act of Congress
II. Type of reform							
Old system:	Mixed	Parallel or selective	Reform of public system Reformed but not closed	Replacement with private system Reformed but not closed	Reform of public system Reformed but not closed	Parallel or selective	Mixed
System of financing	Pay-as-you-go	Scaled-premium	Scaled-premium	Pay-as-you-go	Scaled-premium	Scaled-premium	Pay-as-you-go
% of total insured population in this system	45%	80%	100%	6%	100%	71%	Only began in March 1996
New system:	Reformed public system plus pension fund management bodies (private, public, banks, trade unions, etc.)	Pension fund management institutions (private, public, cooperatives, mutual aid organizations, trade unions, etc.)	No new system introduced	Pension fund management companies (private companies restricted to this field)	Supplementary programme to public system: pension fund management companies (banks and the State)	Pension fund management (as in Chile)	Reformed public system plus pension fund management companies (public and private, of various types)
System of financing	Fully-funded individual capitalization	Fully-funded individual capitalization	n.a.	Fully-funded individual capitalization	Fully-funded individual capitalization	Fully-funded individual capitalization	Fully-funded individual capitalization
% of total insured population in this system	55%	20%	n.a.	94%	n.a.	29%	Only began in March 1996
III. Coverage							
Persons already in the system at the time of its reform	The two year deadline for transferring from the mixed system to the public one has now expired, but it is still permissible to transfer from the public system to the mixed one	Those under 35/40 years of age must transfer to the new system (they can choose between the public system and a pension fund management institution); those over this age maintain the old conditions	n.a.	Such persons could choose between the public and private systems (the deadline for transferring to the private system has now expired)	Compulsory for all persons insured under the public system	Such persons could and still can choose between the old system and the new one (pension fund management companies), and they can still return to the old system	Those under 40 years of age are transferred automatically to the new system; those over this age can transfer to the new system within a certain length of time
Future insured persons (those entering the labour market)	Can choose between the reformed public system and the mixed system	Can choose between the reformed public system and a pension fund management institution	n.a.	Must enter the new system (they can choose their pension fund management company)	Compulsory for all persons insured under the public system	Can choose between the old system and a pension fund management company	Must enter the mixed system

TABLE 1 (continued)

Features	Argentina	Colombia	Costa Rica	Chile	Mexico ^a	Peru	Uruguay
Percentage of EAP covered (both systems)	80%	30%	85%	98%	40%	32%	80%
Percentage of insured persons enrolled in the new system	62%	50-30%	n.a.	49-58%	No information available	50%	Only began in March 1996
IV. Contributions							
Insured persons	Contributions remain the same	Increased under both systems	Increased	Contributions remain the same under the old system but are lower under the new one	Contributions remain the same	Contributions remain the same under the old system but are lower under the new one (since 1995 they are the same in both)	Increased
Employers	Contributions remain the same	Increased under both systems	Increased	Employers no longer pay contributions	Increased	Contributions remain the same under the old system but are eliminated under the new one (since 1995 they have been eliminated under the old system)	Reduced
State	Levies taxes and covers deficit on the public programme and transfers to the new system	Covers deficit on the old system and transfers to the new one	Payroll contributions and transfers to the public	Covers deficit on the old system and transfers to the new one	None	Does not cover deficit on the old system but covers transfers to the new one	Levies taxes and covers deficit on the public programme
<i>Total payroll contribution (excluding State)</i>	27%	14.5% under both systems (1996)	7.5%	13.2%	10% (1996)	14.5% under the old system and also the new one (since 1995)	27.5%
V. Benefits							
Old age pension	Pensionable age increased to 60/65 and standardized in the whole system	Pensionable age increased to 57/62 and standardized in the old system; no age specified under the new system (pension depends on amount in fund)	Pensionable age increased to 60½/62½ and standardized in the whole system	Pensionable age increased to 60/65 and standardized in the whole system	Pensionable age remains unchanged (65)	Pensionable age remains unchanged under the old system (55/60) and is raised to 65 in the new one. In 1995 it was set at 65 in the old system too	Pensionable age increased to 60 and standardized in the whole system
Recognition of contributions made under the old system	Compensatory benefit (under old and new systems), readjusted, without interest, subject to a ceiling. Requires 30 years of contributions and is paid by the public programme	Readjustable interest-bearing certificate, subject to a ceiling. Requires three years of contributions and is paid by the public programme	n.a.	Readjustable interest-bearing certificate Not subject to a ceiling and is paid by the State to the new system	n.a.	Readjustable non-interest-bearing certificate. Subject to a ceiling and requires 4 years of contributions. Is to be paid by the State (but has not been issued)	Contributions to the old system are not recognized, but years of contributions are recognized for the purpose of fulfilling retirement conditions

TABLE 1 (concluded)

Features	Argentina	Colombia	Costa Rica	Chile	Mexico ^a	Peru	Uruguay
Minimum pension	Yes, in the public programme (flat-rate basic pension), but not in the pension fund management institutions	Yes, in both the old and new systems (requires a certain age and number of contributions; the State pays the difference)	Yes, under the public system, which pays the pension	Yes; the State pays the entire pension under the old system and the difference under the new one	Yes, under the basic system, but not under the supplementary one	Yes, under the old system, but not under the new one (introduced in 1995)	Yes, under the public programme (basic pension), but not in the pension fund management institutions
Death and disability benefits	Yes, under the public programme. Under the mixed system and that of the pension fund management institutions the conditions are the same as in Chile	Yes, under the public system. In the system of the pension fund management institutions the conditions are the same as in Chile	Yes (single unified system)	The pension fund management companies take out policies with private insurance companies and charges the premium to the insured person	Yes, under the basic system	Yes, under the old system. Under the system of the pension fund management companies the conditions are the same as in Chile	Yes, under the mixed system. Under the system of the pension fund management institutions the conditions are the same as in Chile
Adjustment of contributions	On the basis of revenue from insured contributors and their total number	Adjusted by the government each year on the basis of the CPI	Adjusted by the government each year	Contributions expressed in constant value units (UFs)	Adjusted by the government	No information available	Contributions expressed in constant value units
VI. Management (of the new individual capitalization system)							
Number of pension fund management companies	21	8	n.a.	16	n.a.	6	Only began in March 1996
Concentration of members in the three biggest companies	40%	No information available	n.a.	70%	n.a.	69%	Only began in March 1996
Minimum capital required (US\$)	3 000 000	4 000 000	n.a.	2 000 000	n.a.	400 000 (1992)	1 000 000
Total amount of pension fund resources (US\$ million)	1 892 (0.7% of GDP)	150 (0.2% of GDP)	n.a.	23 900 (39% of GDP)	8 758 (2.4% of GDP)	215 (0.4% of GDP)	Only began in March 1996
Real annual return on investments	\bar{x} 12.8% (1994-1995)	\bar{x} 3% (1994-1995)	n.a.	\bar{x} 12.8% (1981-1995)	\bar{x} 5% (1992-1995)	7.7% (1993-1995)	Only began in March 1996
Number of changes of pension fund management company allowed	Two per year	Two per year	n.a.	Unlimited	n.a.	Less than two per year	Two per year
Supervisory body	Office of the Superintendent of Pension Fund Management Institutions (financed by the institutions)	Office of the Superintendent of Banks	n.a.	Office of the Superintendent of Pension Fund Management Companies (financed by the State)	n.a.	Office of the Superintendent of Pension Fund Management Companies (financed by the companies)	Central Bank of Uruguay

Source: Compiled by the author on the basis of the legislation and statistics of the seven countries.

^a Refers to the 1992 reform, as the 1995 reform has not yet been provided with the necessary regulations and has many obscure aspects.

Notes: n.a. = not applicable. \bar{x} = arithmetic mean.

until 1997). It is hoped that the present article will clarify the reform options for these nine countries and for the remaining five in the region (Cuba, the Dominican Republic, Haiti, Honduras and Nica-

ragua). The omission of the Caribbean countries is due to the fact that there are very few studies on the 14 countries in question, which makes the execution of such research projects even more urgent.

IV

One single universal model, or multiple models

The "father" of the Chilean pension system reform process, José Piñera, claimed in 1994 that that model is universal, and that it has three essential elements: i) an FIC basis; ii) private pension fund management companies whose activities are restricted solely to that field, and iii) freedom to choose among the private management companies. Piñera asserted that the three countries which had adopted structural reforms in their pension systems up to that time (Argentina, Colombia and Peru) were following the Chilean model, but in reality none of them (nor Uruguay either) applied all three elements, at least in their pure form. Thus, in Argentina the FIC programme is a component in a mixed system, but the PAYG, system continues to exist both in the public component of the mixed system and in the independent option (this is the case in Uruguay, too), while in Colombia and Peru the FIC system is just an alternative to the public PAYG system and has in fact been chosen by less than a quarter of the total number of insured persons. Likewise, three of these four countries permit non-private pension fund management institutions, which may be public, cooperative, or some other form. To return to the case of Argentina: the (present and future) insured persons can choose between the public system and the mixed system, while in Colombia and Peru they can choose between the public system and the FIC system (in Uruguay, current insured members of the social security system can either stay in the public system or transfer to the mixed system, whereas future entrants must join the mixed system). In the face of these arguments, Piñera has admitted that these are "distortions", but he has predicted that these three systems will run into crises and be eliminated, adding that in these cases the reform procedure was the result of a

political compromise to facilitate their approval, but in the long run the pure Chilean model will prevail (Piñera, 1995, pp. 17-50).

But if the Chilean model is universally applicable, as claimed, and has been operating successfully for 15 years, then why is it that there is so far no country in the region which has installed it in its pure form? The answer is that most Latin American countries have political, legal, economic, social, labour, demographic and social security institutional factors different from those of Chile, so that it is difficult to reproduce the Chilean model in full (Mesa-Lago, 1994a, 1994b and 1996).

The drastic Chilean reform was politically feasible because there was an authoritarian government which dissolved Parliament, banned political parties and trade union confederations and ruled the communications media with an iron hand, so that any opposition to the reforms was eliminated or was extremely feeble. Even with the authoritarian regimes in power in Argentina, Brazil and Uruguay (which were, however, not so radical as in Chile), such pension system reform was not possible. President Fujimori of Peru tried to bring in Chilean-type pension system reforms just after his coup d'état, but even so he failed and had to accept a parallel model. The initial attempt by President Gaviria of Colombia to make similar reforms also failed because of strong opposition from Congress, the political parties, other government bodies and social security experts, all of whom freely expressed their criticisms. Even the moderate mixed programme proposed in Uruguay, after careful study and discussion by technical experts from various parties, was initially defeated in Congress in 1992 and was not adopted until two years later, while the mixed model in Argentina was

only adopted after several years of study and underwent considerable amendments in Congress. Moreover, in Colombia and Peru the Constitution provides that the State must play the leading role in social security or that the principles of solidarity and universality must be observed, thus ruling out a private replacement programme. With the ongoing process of democratization in Latin America, the possibility of adopting such a radical reform as that of Chile is even more difficult.

In discussions held by the present author in various countries, the champions of the universality of the Chilean model maintained that those who call for the optimal reform are "neutral" technicians, whereas those who consider political factors in trying to design a viable model are taking a "political" stance. However, proposing reforms which have a high probability of being rejected in Congress indicates a lack of realism on the part of the technicians and results in the long run in waste of the country's resources or those of international organizations.

Furthermore, the economic conditions of the Latin American countries are different too. In the less developed countries of the region, capital markets either do not exist at all (El Salvador, Honduras), or else they have only recently been introduced (Ecuador). Other more developed countries have capital markets, but they are only incipient (Colombia, Uruguay, Venezuela). In all these countries, there are few profitable investment options, so that it is essential (as the World Bank maintains) to first of all adopt laws to establish, regulate and stimulate capital markets and the private insurance industry, before thinking of privatizing pension systems.

In many Latin American countries, social security displays less favourable conditions than in Chile. In the less developed countries (Bolivia, Colombia, Ecuador, Paraguay, Peru and most of Central America and the non-English-speaking Caribbean), social security covers less than a quarter of the population. Moreover, the magnitude of poverty, the informal sector, self-employment and the marginal peasant sector is much greater than in Chile. The public systems have faced serious obstacles in trying to expand coverage of the population, but adoption of the Chilean model would raise insurmountable barriers, since most of the population (poor people, informal-sector workers, non-wage earners and rural dwellers) would simply not have access to it. One of

the main criticisms levelled at the first reform proposal (based on Chilean-type principles) in Colombia was precisely the difficulties it would raise in expanding coverage of the population, and this led to the introduction of a 1% solidarity contribution in order to help attain this objective.

Very large State transfers would be needed in order to put the private pension programme of a middle- or upper middle-income insured minority on a sound footing and cover the deficit on the old system, pay the certificates of previous contributions to that system (recognition bond) and guarantee a minimum pension under the full individual capitalization system. This would have to be done by using public resources that are desperately needed in such fields as primary health services, nutrition and social assistance in order to relieve the situation of the majority of the population who are poor or have low incomes and are not covered by social security.

Among the more developed countries of the region, some pioneers in the field of social security such as Uruguay and Argentina had pension system deficits (at least until the adoption of reforms) much worse than that registered by Chile before its reform process, and the cost of a Chilean-type reform would therefore have been much higher. There are also adverse demographic and other factors: for example, the number of active contributors per pensioner was 2.4 in Chile, but it was only 1.6 in Argentina and 1.4 in Uruguay. Even some less developed countries, such as Colombia, have worse imbalances (especially in the civil service sector) than Chile had. Finally, in countries like Ecuador, Paraguay, Peru and Venezuela (unlike Chile) the State has not fulfilled its social security obligations in the past, so that there is no guarantee that the governments are going to act in a radically different manner, "behave themselves" and finance the heavy fiscal burden generated by the reforms.

It is argued that the Chilean model is the only one with 15 years of successful operation behind it, whereas the others have been operating for less than three years or even for only a few months. The same thing could have been said, however, when the Chilean reform process began. Indeed, 15 years of practical experience are no guarantee that the success will continue: the vast majority of the social security systems in the region also worked well during the accumulation period, for 20 years or more.

On the other hand, the lessons of the Chilean experience have been useful in the reform processes of other countries, for reducing or solving some of the shortcomings revealed by the Chilean model and reducing its high fiscal cost. For example, in the light of that experience limits have been placed on the recognition bond (a ceiling, prior contributions or non-payment of interest, as in Argentina, Colombia and Peru) or no such bond is been issued (as in Uruguay, where past contributions are used to finance the basic pension in the public programme); the minimum pension has been eliminated in the FIC system (Peru up to 1995) or replaced by a basic pension in the public programme (Argentina and Uruguay), or else stricter conditions have been introduced (a minimum age limit and a given number of prior contributions in Colombia); stricter conditions of eligibility have been applied than in Chile (5 years more for women's retirement in Peru); instead of eliminating the employer's contribution it has been maintained (Argentina), increased (Colombia) or only slightly reduced (Uruguay); the insured person's contribution has been kept unchanged instead of reducing it (Argentina) or it has actually been increased (Colombia and Uruguay); a limit of two per year has been placed on transfers from one pension fund to another, which have provided pension fund salesmen with juicy commissions but have not necessarily benefited the contributors (Argentina, Colombia, Peru and Uruguay); and measures have been taken to ensure the veracity of pension fund publicity and the provision of clear and reliable information to contributors (the same four countries). Many of these changes may be seen from table 1.

The failure, on the part of many international consultants who believe in the universal applicability of the Chilean model, to take account of the differing institutional factors in the various countries of the region is clearly reflected in their reports, which usually give quite a sketchy diagnosis of the public

pension system in the country in question and then devote the rest of the report to an enthusiastic endorsement of the successful Chilean formula. This is not a completely generalized attitude, however, for there are Chilean political leaders and technical experts who give due weight to the institutional factors and do not believe there is an optimum universal model. In 1994, for example, Jorge Arrate, the Chilean Minister of Labour and Social Security, described the Chilean reforms as "a long learning process with both hits and misses" and said that there was "still some way to go in the quest for improvement", while Edmundo Hermosilla, the Minister of Housing, criticised the attitude of trying to "sell" the Chilean model abroad (notes by the author). At the opening ceremony of the Latin American Congress of Pension Fund Management Companies, held in Santiago in May 1996, President Frei acknowledged the positive aspects of the Chilean model but warned that "it has not yet been tried to the full" and that a "thoroughgoing reform" was needed in order to perfect it and reduce or solve its outstanding problems. Among these problems are: i) the high fiscal cost of the system (US\$ 2.1 billion in 1995, or 3.4% of GDP), which is partly defrayed by the insured persons themselves, through the taxes they pay; ii) the high commissions charged by the pension fund management companies and the insurance companies, which it is sought to reduce through bills aimed at preventing excessively frequent transfers from one pension fund to another, stimulating competition among insurance companies, and increasing the information made available; iii) the challenge of finding new investment opportunities for a pension fund which is expected to double in five years (bills to permit investment in infrastructural projects and real estate developments and stimulate investment abroad); and iv) the negative return (-3.5%) turned in by the new system in 1995, which has made it necessary to lower the projected future return from 12.6% (1981-1995) to 4% (Frei, 1996, pp. A 1 to A 16).

V

The main features of the strategies of the ILO and the World Bank

1. The International Labour Organisation (ILO)

In 1990, the Social Security Division of the ILO commissioned the author of the present article to carry out a study on the structural adjustment, its social costs, the situation as regards social security, and the role the latter should play in tackling those problems in Latin America. The study also contained a diagnosis of the situation in eight countries, an analysis of the various reforms effected in pension systems, recommendations for adapting social security to the changes which had taken place, and proposals regarding its future role (Mesa-Lago, 1991c). The purpose of the study was to provide the ILO with bases for designing its future policy in the region, an issue which was discussed at the 13th Conference of American Member States, held in 1992.

The Report of the Director-General of the ILO to that Conference contained the following conclusions:

a) social security had not been discussed in a macroeconomic context since 1966, and while it was now suffering from an organizational and financial crisis throughout the region, that should not serve as a pretext for holding back its progress;

b) social security must be adapted to the new situation (by modernizing it, reducing bureaucracy, increasing its efficiency, and restoring its financial and actuarial balance) in order to offset the adverse social effects of the structural adjustment;

c) although the ILO agreements had played a decisive role in the development of social security, there were grounds for wondering if they were still suitable instruments for the necessary reforms;

d) the new policies must be decided upon by the Governments themselves, but they should maintain the basic principles of social security (universality, solidarity, equity and redistribution);

e) the State should continue to carry out its functions and responsibilities (as regulator, co-financier and guarantor of the system), while leaving the broadest possible scope for private enterprise (profit-making or non-profit-making), and

f) the private sector should concentrate on the establishment of supplementary programmes based on full individual capitalization (compulsory or voluntary, for part of the population), but that was not essential for financing the general system and could run into serious problems and challenges, such as the high cost of the transition and the problem of finding profitable investment opportunities for such a large amount of resources.

The Report in question summarized the social security situation in six countries of the region but did not analyse or evaluate pension system reforms, except in the case of Chile, which was criticised and considered not to be in keeping with various ILO conventions (ILO, 1992a and b). Although the Report represented a notable step forward, the present author's view is that it basically maintained the conventional position, did not discuss the most important and controversial problems of pension system reform or make a systematic comparison of such reform processes, proposed an alternative (supplementary pensions) based on the experience of Europe rather than Latin America, and did not make any specific recommendations.

In 1992, the Director of the Social Security Division published an article in which he made serious in-depth criticisms of the Chilean pension system reform process but under-estimated its achievements, offering as an alternative an extremely succinct model based on three main pillars, namely: i) a public programme (without specifying how it should be financed) guaranteeing a basic minimum pension for all insured persons and a social assistance pension for non-insured persons without resources; ii) a programme (whose form of management was not specified) with partial collective capitalization (rather than FIC) which would retain the employers' contributions and provide a defined wage-related pension; and iii) a voluntary supplementary programme (whose form of financing and management were not specified) which would perhaps also be financed by the employers and pay a supplementary pension (Gillion and Bonilla, 1992, pp. 171-195). This article was

rebutted by another article, by a Chilean technical expert, which was published in the same journal (Bustos, 1993). The controversy marshalled the supporters of the Chilean model, and also some supporters of the mixed approach, but did not offer a detailed alternative model.

Two important steps towards a more detailed alternative model based on three main pillars, together with stronger criticism of the defects of public systems, were taken in the April 1993 Report of the Director-General of ILO (ILO, 1993) and a subsequent article published in that organization's *Review* (Iyer, 1993, pp. 187-207). Both these documents highlighted the many serious shortcomings in the social security programmes of developing countries. They noted that: i) their institutions are usually over-centralized, are incapable of meeting the needs of their beneficiaries, and are not coordinated with macroeconomic policy; ii) there is only limited coverage of the population; iii) the level of benefits is usually very low and is not adjusted for inflation (sometimes it even falls below the poverty line), while the procedures for obtaining benefits when eligible are inefficient and protracted; and iv) administrative costs are high, as are the levels of evasion and arrears, there is no effective system of recording and checking payments, and there are cases of flagrant corruption. Over the last two or three decades, these shortcomings have led to profound disillusionment with public systems, which are very often seen as being inefficient compared with private ones, giving rise to demands for radical reform and a search for alternative schemes, including FIC systems with defined contributions and private management.

While warning that it is not possible to design precise universally applicable strategies and structures, because of the differences in countries' needs and resources, the ILO developed in greater detail the three-pillar model outlined by Gillion. In this alternative model, the first pillar—obligatory and of top priority—is a basic universal subsistence pension, granted on the grounds of need, administered by the State and financed from taxes on the pay-as-you-go principle. The second pillar, which is also obligatory, is administered by the department of social security, must be implemented on a unified basis and expand population coverage, must offer defined benefits, and be based primarily on partial capitalization and financed by contributions from both employers and in-

sured persons, with the State guaranteeing an adequate level of pension benefits. This pillar must be reformed in order to increase its administrative efficiency, its autonomy with respect to the State, its financial soundness and capital returns, as well as to guarantee the payment of adequate pensions. The third pillar, which will be voluntary but regulated by the State, provides supplementary pensions and is based on defined contributions (by the insured persons and/or their employers). It is based on FIC (although without completely ruling out other methods), is run by private competitive management bodies, and does not provide defined benefits.

A pragmatic alternative offered by the ILO involves a combination of the second and third pillars, but with greater emphasis on the third pillar when the public considers this to be necessary. The management of the three pillars must be separate, but it must be coordinated, regulated and supervised by an autonomous authority with tripartite representation on its governing board. The State will be responsible for the costs of transition, risks due to inflation, the legal structure of the system, the guarantees in case of insolvency, and the incentives for the development of the third main pillar (Iyer, 1993, pp. 187-207, and ILO, 1993).

The ILO probably has the largest number of studies carried out on pension systems in the region (although because of their confidential nature most of them have not been published), as well as the biggest stock of up-to-date information and figures, all of which provides an excellent base for action in this field. Furthermore, it can provide a balancing element in the debate, through its alternative model, provided it maintains a flexible position and continues to formulate proposals which are even more specific and in keeping with the conditions of the region. It has been reported that the Social Security Division has embarked upon an ad hoc programme to formulate a world strategy in this field.

2. The World Bank

The World Bank began to include pension system reform in its studies and mission agendas early in the 1980s. It also allocated part of its structural adjustment loans to technical assistance to facilitate such reform and laid down conditions for the disbursement of such funds. The author of the present article

prepared a global diagnostic study, participated in missions and prepared reports on six Latin American countries (McGreevey, 1990, and Mesa-Lago, 1991a). As these activities were extended, it became clear that a world-wide study was needed in order to establish criteria for guiding the Bank's policy.

The World Bank study, which took several years to prepare and was published in 1994, was also based on three basic foundations or pillars (like the ILO study), but it proposes radical reform involving the replacement of the old system, as we saw in section II. The three pillars differ in terms of their legal nature, form of financing, contributions, benefits and management. Thus, the World Bank proposes: i) an obligatory first pillar designed to achieve the objectives of redistribution and insurance, ensure a minimum guaranteed or uniform benefit financed from taxes (to be operated by the public sector on the PAYG principle); ii) a second pillar (also obligatory) with the objectives of saving and insurance, with defined contributions but non-defined benefits, to be achieved through an individual saving plan (in which only the insured person makes contributions) or a plan supported by the employer or enterprise (in which contributions are made by both the insured person and his employer), based on the FIC method and managed by the private sector but regulated by the State; and iii) a third pillar (voluntary) similar in other respects to the second pillar.

The World Bank recommends that there should not be only a first pillar, since this might not be financially viable in the long term (as the system matures and the population grows older), as well as possibly giving rise to distortions in the labour market, encouraging evasion and hindering development of the capital market. It therefore offers four alternatives, each of which combines a form of public system with some type of individual saving system, both compulsory. The first alternative consists of a uniform public pension system, with an individual saving plan; the second is a public system which guarantees a minimum level of pensions, plus an individual saving plan; the third corresponds to a uniform public pension system plus a company saving plan, and the fourth is a public pension system providing pensions on the basis of need, plus a company saving plan.

The World Bank warns that its model is not just a single option: it is neither unique, nor applicable to

all countries, so that there may be various different combinations for each pillar, the relative sizes of the compulsory pillars may vary considerably, and the model may need to be introduced at different rates in different countries. This structural pension system reform is recommended in particular for countries which are going to embark on a new pension system and those with existing systems which are in a precarious state (James, 1996). This rules out most of the Latin American countries, except for the pioneers in the field of social security (three of which already carried out reforms) and a few others.

3. Comparison of the strategies of the ILO and the World Bank

The differences between the three pillars of the ILO and of the World Bank are to be found mainly in the second pillar: this is obligatory in both cases, but whereas in the World Bank version it is privately managed (with State regulation), with defined contributions (by the insured persons alone or in conjunction with employers) but non-defined benefits, and based on FIC, in the ILO version this pillar is administered by the social security authorities, contributions are made both by the insured persons and by their employers (or through taxes), benefits are defined, and partial collective capitalization (PCC) is the preferred method (table 2).

If we compare the seven Latin American pension system reform variants described in section III with the three-pillar models of the ILO and the World Bank, we see that the three pillars exist in virtually all the countries, although there are substantial differences from one country to another (table 3).

First pillar: i) this has always existed, and continues to do so, in Argentina, Costa Rica, Mexico and Uruguay (basic or minimum pension within the public programme or system); ii) it also exists in Colombia and Peru for those who opt for the public system; if the FIC system is chosen, the State guarantees a minimum pension (although this right was not granted in Peru until the end of 1995); iii) it is an available option in Chile, both under the FIC system and in the remains of the public system; iv) social assistance pensions are granted when justified by need in Argentina, Chile, Costa Rica and Uruguay (paid directly by the State in three of these cases, or through the social security system in the case of

TABLE 2

Comparison of ILO and World Bank strategies based on three main pillars

	ILO	World Bank
First pillar:		
Legal nature	Compulsory	
Method of financing	Pay-as-you-go	
Contributions	Tax (fiscal revenue or payroll contribution)	
Benefits	Uniform minimum benefit (based on need)	
Management	Public (State or social security institution)	
Second pillar:		
Legal nature	Compulsory	
Method of financing	Partial collective capitalization (but other systems not excluded)	Fully-funded individual capitalization
Contributions	Non-defined insured persons and employers (or taxes)	Defined (paid by insured person and optionally also by employer)
Benefits	Defined (related to contributions, with a possible minimum)	Not defined
Management	Public (social security institution)	Private (but publicly regulated)
Third pillar:		
Legal nature	Voluntary	
Method of financing	Full individual capitalization	
Contributions	Defined (paid by insured person and optionally also by employer)	
Benefits	Not defined	
Management	Private (but regulated)	

Source: Summary by the author, based on ILO, 1993 and Iyer, 1993 and on World Bank, 1994 and James, 1996.

Costa Rica); v) in Colombia, Costa Rica, Mexico and Peru this pillar is based not on the PAYG method, but on the scaled-premium method; and vi) only social assistance pensions are financed wholly from taxes; the minimum pension in Chile is financed only partially by this means, while the basic/minimum pensions in public systems are financed mainly from payroll contributions.

Second pillar: The World Bank version of this pillar: i) exists in full in Chile (FIC); ii) also exists in Argentina and Uruguay, but only in the FIC component element, if the mixed system is chosen (it does not exist if the public system is chosen); iii) exists in Colombia only if the FIC system is chosen; and iv) in all the countries except Chile and Peru, this pillar can be managed by non-profit-making public institutions (not just private corporations, as recommended by the World Bank). Consequently, in the countries which have carried out reforms (except Chile) the second pillar is closer to the ILO strategy than that of the World Bank: completely so in Costa Rica and

Mexico (under the 1992 reform) and partly so in Colombia and Peru (in the optional public systems) and in Argentina and Uruguay (in the public components of the mixed systems).

Third pillar: This exists in all the countries except Costa Rica, although in Argentina and Uruguay it only exists if the mixed system is chosen, and in Colombia and Peru only if the FIC system is selected.

Although at first sight the World Bank strategy would appear to be more varied than that of the ILO, in the case of Latin America only the Chilean reform complies with all its elements, whereas the great majority of the countries of the region (regardless of whether they have carried out reforms or not) opt for the elements of the ILO's set of features. The differences between the two organizations as regards the second pillar seem irreconcilable, as they stem from very different diagnoses, objectives and conceptions and elements of the reform process.

TABLE 3

**Pension reforms in seven Latin America countries
and the three pillars of the ILO and the World Bank**

Countries	Compulsory pillar Managed by the public sector (ILO and World Bank)	Compulsory pillar Managed by the private sector (World Bank) ^a	Voluntary pillar ^b (ILO and World Bank)
Argentina	Yes: uniform basic pension in both the reformed public programme and in the public component of the mixed system (but not under the pension fund management institutions), or social assistance pension	Yes, under the pension fund management institutions if the mixed system is chosen, but those institutions can also be public or of some other type ^a	Yes, under the pension fund management institutions if the mixed system is chosen
Colombia	Yes, minimum pension for those choosing the public system (plus another pension depending on income and amount of contributions) or guaranteed minimum pension for those choosing a pension fund management institution	Yes, but only if a pension fund management institution is chosen; moreover, such institution may be public or of some other type	Yes, if a pension fund management institution is chosen
Costa Rica	Yes, minimum pension under the single public system (plus a pension depending on income and amount of contributions) or social assistance pension in cases of need	No, but there can be voluntary supplementary pensions obtained through the public system or some other system ^a	No
Chile	Yes, minimum pension guaranteed by the State (for those insured through pension fund management institutions) or social assistance pension in cases of need	Yes, throughout the new system of pension fund management companies	Yes, throughout the new system of pension fund management companies
Mexico ^c	Yes, minimum pension under the public system (plus a pension depending on income and amount of contributions), but no minimum pension for those insured through pension fund management institutions and no social assistance pensions	The basic pillar is the public system, and the pension fund management institutions (partly managed by banks but with funds controlled by the State) are merely a supplementary system ^a	Yes, through the pension fund management institutions
Peru	Yes, minimum pension for those choosing the public system (plus a pension depending on income and amount of contributions) and minimum pension for those insured under pension fund management companies, but no social assistance pensions	Yes, but only in the case of those choosing pension fund management companies, not those choosing to stay in the public system ^a	Yes, in the case of those choosing pension fund management companies
Uruguay	Yes, basic pension under the public programme or social assistance pension in case of need, but no minimum pension under the pension fund management institutions	Yes, through the pension fund management institutions in the case of those choosing the mixed system, but the pension fund management companies may also be public ^a	Yes, through the pension fund management institutions, but only in the case of those choosing the mixed system who have high salary levels

Source: Based on a paper by Fabio Bertranou (1996) on pension system reforms in Argentina, expanded and amended by Mesa-Lago.

^a Countries which depart from the system of private management advocated by the World Bank and have public management or the possibility of such management, as advocated by the ILO.

^b Contributions by the insured person only.

^c This refers to the 1992 reform, not to that of 1995, which is not yet in force.

VI

Actions by other international and regional organizations

1. The International Social Security Association (ISSA)

The Latin American Regional Working Group on Pensions set up by the ISSA in 1976 has held at least six meetings, and at some of them discussions have taken place on public and private pension systems, as well as supplementary pensions. At its first meeting, held in 1978, the Working Group came to the following conclusions: a) pension system policy should be based on general compulsory public systems providing basic pensions, and voluntary supplementary systems to improve benefits over the basic level; b) the State should help to finance general systems in order to avoid the erosion of pensions and facilitate the expansion of population coverage; and c) the question of whether or not supplementary systems have a negative effect on the equilibrium of the general system should be studied. These issues were not dealt with in depth at the next three meetings, held in 1983, 1985 and 1987.

At the fifth meeting, held in 1989, a brief review was made of supplementary systems and the experience of the industrialized countries, but the only Latin American case analysed was that of Uruguay. At that meeting, it was concluded that the general pension systems of the Latin American countries are different from those of the industrialized countries and that supplementary systems would aggravate social disparities and deprive the general system of the financial resources needed to expand its coverage. It was acknowledged, however, that (compulsory or voluntary) supplementary systems could contribute to capital accumulation, channel resources to the financial market, and aid economic development, but it was doubted whether this should be an objective of the social security system.

The sixth meeting, held in 1991, was devoted to the question of the financing of pension systems in the region. Two general studies were presented (one on the PAYG and FIC systems, and the other on alter-

native pension systems), descriptions were given of the pension fund situations in Argentina, Costa Rica, Mexico, Panama and Peru (with brief references to the Chilean reform process), and some degree of consensus was reached on the following points: a) pension systems are passing through a financial crisis due to various social, economic, demographic and political factors; b) PAYG systems have the advantage of providing favourable redistributive effects for low-income groups, while FIC systems with defined benefits are more suitable for better-off groups, so that it is necessary to reconcile the best features of each system; c) pensions must be instruments of social policy and not of financial interests; d) the crisis in social security makes it urgently necessary to review basic concepts and the field of action in this respect, as well as reforming pension systems in general (it must be decided whether the system should be completely public or whether it could include private components); and e) alternative formulas should be considered for ensuring the universal coverage and financing of pension systems, in the light of the different economic and social factors of the countries (ISSA, 1990 and 1991).

The Secretary-General of the ISSA delivered an address in Buenos Aires in 1992 in which he referred to the debate on privatization in Latin America. He announced that in future the ISSA would be more energetic in its defence and promotion of social security, with emphasis on improving its efficiency, and he concluded by saying that each country must seek the solution that fitted in best with its circumstances, but always assigning a crucial role to social security and the State (Hoskins, 1992, pp. 5-14). The former Director of the Regional Office of the ISSA asserted in the same year that the economic crisis and the structural adjustment process made it essential for social security to redefine its role and adopt new lines of action and strategies. He said that there was no universally applicable solution, but offered some very brief guidelines for the reformulation of policies

in that field (Moles, 1992, pp. 103-115). The International Social Security Review published by the ISSA Regional Office has published articles on pension system reforms carried out or proposed in Argentina, Bolivia, Brazil, Colombia, the Dominican Republic, Nicaragua, Peru and Uruguay, but not Chile. In 1994, the ISSA held a meeting on "The challenges of social security reform", at which various types of reforms and ways of carrying them out and evaluating their results were discussed (ISSA, 1992a and 1992b; 1993a and 1993b; 1994a and 1994b and 1995a and 1995b). In 1995 that Association devoted an issue of its world review to pension system reform: out of a total of seven articles, five were on industrialized countries, one was of a general nature (the critique by Beattie and McGillivray of the World Bank model), and only one was devoted to Latin America (ISSA, 1995c, pp. 1-174). In 1996, the ISSA organized a meeting of experts from the Americas on "Regulation and financial management of reformed pension systems" whose objectives were to: redefine and update the principles of social security (determining which should be maintained and which should be changed in order to adapt them to the economic reform process), discuss the new role of the State in reformed pension systems, and identify the areas of greatest importance and lines of action for the future.

Notwithstanding all these efforts and meetings, and in spite of the fact that there is general consensus on the need for pension system reform, the ISSA and the Regional Working Group have not prepared an integrated comparative study evaluating the advantages and disadvantages of each reform process and proposing a strategy for the world as a whole and, in particular, for the Latin American region.

2. The Inter-American Development Bank (IDB)

Although the IDB has a long history of participation in the area of health, its participation in the field of pensions is only very recent. In 1980 it published a study on the possible impact of Value Added Tax on the financing of social security. Five years later, the author of the present article was commissioned to carry out a short study on the social security situation in the region and ways in which the IDB could intervene in that area, but no concrete action was taken. In

1990, the Department of Economic and Social Development asked the present author to carry out a more extensive diagnostic study, with global policy recommendations, and this was published in the IDB's Annual Report (Mesa-Lago, 1991b, pp. 189-227). In 1993, the IDB set up the Social Agenda Policy Group, which carried out pilot missions involving the execution of social development studies (for the purpose of designing future strategies) and published studies on seven countries, including Bolivia, Chile, Costa Rica, Peru and Venezuela. These studies either do not deal with the subject of pensions at all, or else do so only very briefly and without making any recommendations, except in the case of Venezuela, where, after a brief diagnosis, it is proposed that the public system should be replaced with one under private management. The Group apparently terminated its mission in 1996 (IDB, 1993, 1994a, 1994b, 1995a and 1995b).

The IDB has also helped to finance two international seminars on pensions held by the Institute of the Americas in San Diego in 1993 and 1995. At these seminars, papers were presented on reforms that had been effected, Bills put forward in parliament or studies under way in Argentina, Brazil, Chile, Colombia, Peru, Venezuela and Uruguay, as well as on important aspects of such reforms (investment, impact on saving and on the securities market, regulatory framework, cost of delaying reforms, etc.). However, the Proceedings of the seminars have been given only limited circulation and have not been published in book form (Institute of the Americas, 1993 and 1995). The IDB has published specific studies of pension reforms or projects regarding Argentina, Brazil, Chile and Venezuela (Marcel and Arenas, 1991, and Barreto de Oliveira, 1994). In 1995 it set up the Social Development Institute, whose main function seems to be teaching rather than research; by the end of that year it had not published any documents on the subject. In addition, during the current decade the IDB has carried out missions or provided technical assistance on pension reform at least to Ecuador, El Salvador, Guatemala, Paraguay and Venezuela and has granted or is in the course of granting loans in connection with pension reform to Uruguay, Mexico and Argentina. The documents relating to these matters are confidential and have not been published. The Social Division of the Department of Social Programmes and Sustainable

Development has been requested to carry out a new set of studies on pensions in preparation for a "strategy document" on the strategy to be followed.

Some 40% of the IDB's refinancing fund for the period 1996-2001 (approximately US\$ 20 billion) is devoted to social programmes in the region. At present, the IDB is the multinational body providing most financial resources for technical assistance to pension reform in the region, but although a good deal has

been done so far, it is not enough to cover this task adequately. There is an urgent need to prepare studies on key reforms, to make a comparative evaluation of those reforms, and to design a set of desirable features, a strategy or policy guidelines to serve as a guide for the granting of loans and technical assistance for pension reform in the region (according to the IDB, these points will be included in the "strategy document" referred to earlier).

VII

An analysis of the ECLAC document

The first global study on social security in Latin America sponsored by ECLAC (analysis of problems in this field, identification of trends and policy recommendations) was made in 1983, when the debt crisis and the structural adjustment programmes were just beginning (Mesa-Lago, 1985). Between 1991 and 1994, ECLAC published six volumes on the financial situation of pension systems or their reform in 16 countries of the region: 14 from Latin America and two from the Caribbean¹ (ECLAC, 1991; Uthoff and Szalachmann, 1991, 1992 and 1994; Iglesias and Acuña, 1992, and Schulthess and Demarco, 1993). This is the most comprehensive, best-documented and most analytical collection of studies made on this subject in Latin America, but the studies were all written by local experts with different viewpoints. In 1995, ECLAC published a document summarizing, integrating, comparing and evaluating the results of all the studies (Uthoff, 1995a). The present author concurs with the main elements of that document (see also Uthoff, 1995b), but because of lack of space the present article will only analyse its more debatable aspects or those not dealt with clearly or precisely enough.

¹ The countries were: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Paraguay, Trinidad and Tobago, Uruguay and Venezuela. No studies were published on Cuba (important because of its socialist model which is now in crisis), the Dominican Republic, Haiti, Nicaragua, Panama, Peru (one of the five countries which has made a structural reform in this field), and the other twelve Caribbean countries (this subregion needs an in-depth comparative study).

1. Social objectives vs. economic objectives

Although the ECLAC document does not leave out the social objectives of pension systems (championed by the ILO and the ISSA), it concentrates on the economic objectives and the goal of promoting saving (defended by the World Bank), arguing that if these objectives are not fulfilled it will not be possible to achieve the social objectives either (regardless of the pension system adopted). Although this reasoning is justifiable, the main social question dealt with in that document is the hypothetical cost of a universal basic pension equal to per capita GDP for all those over 65, under a PAYG system based on per capita GDP. This is an excessively generous benefit compared with the basic or minimum pensions paid in the most socially developed countries of the region in 1994: in Argentina the corresponding pension was less than a quarter of per capita GDP, in Chile it was one-third, and in Uruguay it was one-fifth. When the benefit is set so high, the requirements for financing it are also enormous: a 3.3% average annual increase in GDP over the next 35 years, together with increases of 1.7% in employment and 1.6% in real wages, all of which are much higher than the figures registered over the last 15 years. On the basis of these figures, it is concluded in the ECLAC document that it will be necessary to increase national saving (fixed capital formation must be over 22% of GDP) and that the contribution made by pension funds will be crucial in this respect. Before going into this matter, however, we must look at the way that the study deals with the methods of financing pension schemes.

2. Pay-as-you-go vs. capitalization

In the document in question, two extreme types of pension financing systems are used: simple PAYG, and FIC. The document asserts that most of the 13 countries analysed which had not reformed their pension systems ended up with PAYG (p. 53). According to table 5, however (and also according to more recent information collected by the present author), only two countries have a PAYG system (Brazil and Uruguay, in the old public system), while 11 have an intermediate system of partial collective capitalization (mostly based on the scaled-premiums method). Rather confusingly, the document refers to "pay-as-you-go with scaled premiums" (in El Salvador and Honduras), "pay-as-you-go with reserves" or simply "reserves" (in Guatemala, Mexico and Paraguay), and "pay-as-you-go" (in Ecuador, when the method used is really that of scaled premiums), while it does not identify the system used in three countries (Bolivia, Costa Rica and Venezuela which actually use the scaled-premium method). In reality, most pension systems in the region did not have simple PAYG systems in the 1980s (nor do they have them now), and the main method used was or is scaled premiums. It is quite true, however, that the system of scaled premiums has not worked well and, in quite a number of countries of the region, is suffering from serious actuarial imbalances which mean that it will eventually have to be brought into balance or converted into a pay-as-you-go system (Mesa-Lago, 1985, 1991a and 1994a). With regard to the countries which have reformed their pension systems, the document says that "one way or another, they are replacing or propose to replace their pay-as-you-go systems with individual capitalization" (p. 26). This is true of the new system in Chile (although the old system is still operating on a pay-as-you-go basis), but it is not true of Argentina or Uruguay (where pay-as-you-go is used in the old public system and the public component of the mixed system) or of the alternative public systems of Colombia and Peru (which use scaled premiums).

3. Impact on national saving

Basing itself on the erroneous belief that most pension systems in the region use simple PAYG, the ECLAC document concludes that they did not have investment funds and therefore did not contribute to

national saving (pp. 8-14). We may recall the inconclusive debate on this matter referred to in section I. The document does not explain, however (until its conclusions, and then only very briefly), that the State pressured or obliged the social security institutions of the region to invest their reserves in public securities or to deposit them in the Central Bank (without indexing of the principal or the payment of positive real interest rates), thus helping to decapitalize those reserves. At the same time, it implies that only FIC can generate extra saving and good rates of return on capital, when in fact these benefits can also be provided by the scaled-premium method if the environment is equally favourable and the State "behaves itself". In actual fact, the document shows in its table 3 that in 1981-1989 (when FIC was already in operation) Chilean national saving was only half the regional average and was the lowest except for Guatemala; furthermore, after analysing the return on capital in 15 countries (in 1990-1992) it concurs with the findings of most of the studies on this subject, which came to the conclusion that it is not possible to decide conclusively whether PAYG or FIC (or, we might add, scaled premiums) is the most suitable method for financing pensions.

4. Public vs. private systems

The ECLAC document confuses the model or type of system with its method of financing (and assumes that all public systems are based on PAYG), so that when evaluating public and private systems it attributes to both systems advantages and disadvantages which may be correct in the case of PAYG but not in that of scaled premiums, or it considers that FIC is the only method capable of providing advantages which in fact also exist, or could be introduced, in public systems based on scaled premiums or on PAYG. Nor does it separate the endogenous defects of the system from those which come from its environment. Finally, it never says whether the fully-funded individual capitalization it advocates should be the only method of financing permitted or whether it should exist as part of a mixed system.

Most of the problems it identifies in public systems, as well as the measures proposed for solving them, are correct, but as a general rule it blames those systems for having three defects which are not in fact found in quite a number of countries, namely: i) they cover only a minor part of the labour force,

which is true in seven countries (the least-developed ones) but not in the other eight, whose coverage ranges from 53% to 93% (Argentina, Brazil, Costa Rica, Jamaica, Mexico, Trinidad and Tobago, Uruguay and Venezuela); ii) their conditions of eligibility for benefits are not homogeneous, and they have some excluded subsystems which affect labour mobility: this is true in most of the countries, but not in five of them (Argentina, Costa Rica, Jamaica, Trinidad and Tobago and Uruguay, except for some small groups); and iii) they suffer from excessive administrative expenses: this is also true in most of the countries, but not in Argentina, Brazil, Costa Rica, Mexico and Uruguay, whose administrative costs range between 2% and 6% of total expenditure. These are not inherent problems of public systems, and the considerable exceptions mentioned above indicate that many of them can be corrected in other countries. Other problems identified are not inherent in public systems either, but have been wholly or partly imposed by the environment, such as indebtedness of the State and low return on capital. The latter problem may be due to inefficient internal management of investments, but it may also be the result of the use of funds by the Government for its own purposes, high levels of inflation, or the absence or weakness of capital markets. Some of these problems may also occur in pension systems using FIC: Colombia and Peru, for example, have very low levels of population coverage, and the return on capital in the Colombian FIC system has been negative.

Furthermore, the ECLAC document describes FIC systems (as opposed to PAYG) as having the following characteristics, some of which, however, are also observed in public systems based on scaled premiums or PAYG, or in mixed systems: i) they provide homogeneous entitlement conditions and greater labour mobility (in addition to what was stated earlier, it may be noted that the Armed Forces have separate arrangements in the Chilean system, as well as in all the other countries except Costa Rica); ii) they regulate and supervise the financial market (something which could also occur in a system based on scaled premiums); iii) they make possible the formation of savings and reserves (also perfectly possible in a system based on scaled premiums), and iv) they assign the State a social function, by guaranteeing a minimum pension (this already occurs, or could be introduced, in public or mixed systems). Finally, that

document attributes three other advantages to FIC which are equally debatable: i) it seeks to solve the problem of low coverage (a problem which is just as difficult, or more difficult, to solve in this system than in a public scheme); ii) it generates incentives for workers to join the system and declare their full income (although table 1 of this article shows that in the FIC systems of Argentina, Chile, Colombia and Peru, between 38% and 51% of members do not contribute actively), and iii) by doing away with the employer's contributions simultaneously "eliminates the negative redistributive effect caused by an increase in labour costs" (p. 37). With regard to this latter point, not only has the employer's contribution not been eliminated in Argentina, Colombia and Uruguay, but also the impact of its elimination is the subject of theoretical and empirical debates and a distinction must be made between two effects of the employer's contribution: if it is transferred to the worker or consumer it should not have an impact on the cost of labour (although it can have regressive effects on distribution), whereas if it is truly paid by the employer it can indeed have adverse effects on job creation.

5. Conclusions of the ECLAC document

An important conclusion is that pension system reforms need not necessarily replace PAYG systems (or, it may be added, systems based on scaled premiums). Another conclusion is that in the 13 countries which had not introduced reforms, the experts recommended that they should correct the weaknesses of their public systems (in order to maintain their redistributive function), while improving the financial management of the reserve fund (thus admitting implicitly that they were not simple PAYG systems) and moving in the direction of mixed systems (along the lines of the reforms in Argentina and Uruguay). Specifically, the following types of reforms were recommended in the 16 countries studied: 7 mixed systems, 4 reformed public systems, 2 parallel systems, 1 FIC system, and 2 without specific recommendations. In spite of the variety of experts who prepared the national studies, only one proposed FIC, and even then with crucial elements of solidarity. However, the document does not recommend a general strategy or list of desirable features to be followed, although it does indicate the general objectives (primarily economic) that should be pursued in any reform. Although these

objectives are sensible enough, no order of priorities is established among them, and some social objectives of great importance are excluded.

It is also concluded in the document in question that pension systems should be improved in order to: i) ensure pensions in line with the contributions of the insured; ii) give contributors greater freedom to choose and occupational mobility, through better information and education; iii) strengthen the financial management of the systems and the investment of their reserves; iv) insulate the systems from political or user pressures seeking to use the funds for purposes other than those corresponding to their essential nature, to add extra benefits or to slacken entitlement conditions; v) regulate, supervise and

promote capital and insurance markets so that they can act as financial intermediaries for the funds; vi) provide the fiscal resources essential for facilitating a smooth transition and the minimum State guarantees needed to ensure confidence in the system. The document should also have added four social objectives of high priority: i) gradual extension of coverage in order to attain universality; ii) provision of a minimum or basic pension; iii) allocation, as a matter of priority, of the fiscal resources needed to attain universality and avoid regressive transfers, and iv) measures to complete the unification of the systems (by incorporating privileged groups which are still outside the system) and standardize entitlement conditions.

VIII

Future action

Over the last 10 years, the international and regional organizations have made notable progress in the field of social security pensions, both at the world and regional levels. Thus, they have organized studies of almost all the Latin American countries (but only of a few in the non-Spanish-speaking Caribbean), they have identified and analysed key aspects, they have compared the reforms which have been carried out and have evaluated their advantages and disadvantages, and they have developed lists of desirable features (paradigms) at the global level to outline the ideal types of reforms. The incorporation of the economic objectives of pension systems and the debate on economic and social objectives, are important elements which should be dealt with in greater depth, in order to determine how these two dimensions could and should be integrated. A new step which is needed in Latin America is the development of an *ad hoc* strategy that takes account of the region's diversity both in its institutions and in the level of development of its social security systems.

The taxonomies or paradigms drawn up by the ILO and the World Bank fully coincide in their first and third pillars but display profound differences in the second because of the different objectives, diagnoses and reform elements proposed by the two organizations. Except in the case of Chile (whose

model is the only one that complies with all the elements proposed by the World Bank), the other Latin American countries which have carried out reforms do not fully comply with either the ILO or the World Bank versions of the second pillar, while most of the countries which have not yet reformed their systems comply with the ILO version of that pillar (although it remains to be seen what will happen if they do reform their systems). The alleged universality and perfection of the Chilean have been refuted not only by the analyses made in the present article (and other studies), but also by the diversity of the reforms carried out in four other countries and the verdict of the Chilean President himself. Despite the apparent flexibility of the paradigms drawn up by the ILO and the World Bank, both aim to apply to countries with enormous differences, ranging from the industrialized nations of Europe (which have pension systems going back a century or more) to desperately poor countries in Africa and Asia which do not even have social security pensions. Even within Latin America, the differences between the extremes are enormous: on the one hand there are countries like Argentina, Chile, Costa Rica and Uruguay, and on the other there are cases like Haiti, Honduras and Bolivia. All this raises serious doubts about the scope of applicability of such paradigms.

Another position is that which holds that all countries are different and each must design an *ad hoc* system that fits in with its special characteristics. Although this position is reasonable up to a point, it ignores the fact that in the field of social security (as in many other areas of policy-making) the experience of more than a century indicates that there are a certain number of general models which have come to be applied in all countries, although they may be adapted in some non-essential aspects. Furthermore, if this position were maintained to the extreme, this would more or less paralyse general progress in this field. Moreover, international organizations need to have at least general guidelines for recommending policies, providing technical assistance and, in the case of the financial organizations, laying down conditions for their loans.

Between the two extremes (a world paradigm of desirable features and separate *ad hoc* systems for each country), an intermediate position can be taken, at least with respect to Latin America. The idea is to develop a typology by groups of countries which have basic common characteristics (in terms of their institutions and social security systems), and use them as the basis for general reform models for each group. The final decision on the reform model to be adopted and the adaptations that might need to be made to it would be the responsibility of each individual country, and in order to design a viable reform model they would have to take account of their political characteristics. In previous studies, the present author has developed several such lists of features, which have proved useful for analysing problems and identifying trends (Mesa-Lago, 1985, 1994a and 1994b). For example, most of the pioneering and most developed countries (which share some common features such as universal coverage, mature pension systems, ageing of their populations and high pension costs) have already carried out reforms, all of

which include an FIC element and private management (although not in the entire system, except in Chile, and with some variations from country to country). Brazil is also in that category, and Cuba ought to be too, but its pension system is typical of the former socialist countries, so that it calls for special treatment. At the other extreme are the less developed countries, which have very low population coverage, young pension systems and populations, a high incidence of poverty, an enormous informal sector, etc. In these countries, the first main pillar (of a social assistance nature) would have to be the most important, and the available fiscal resources should be used to finance that pillar rather than being allocated in a regressive manner to reform a pension system that only covers between 9% and 20% of the population (this minority group should seek its protection within the enterprise, in the second pillar, and in the third (voluntary) pillar. Between these two extremes is the intermediate group of countries, which display the greatest variety and call for the application of alternative models. Reform models should also be developed for countries which have already introduced reforms but may run into serious difficulties in implementing them. These are, of course, very general guidelines which need more research in order to make them more specific. Nevertheless, this approach would appear to be more promising than the other two discussed above, and some of the international and/or regional organizations have ample resources for pursuing this line of action. Finally, it would be ideal if the execution of this task (as well as other future studies of various types) could be coordinated among all the relevant international organizations, so as to save resources and reduce conflicts for the benefit of all the current and future members of pension systems in the region.

(Original: Spanish)

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The contributions *of applied anthropology* to peasant development

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The present surge of interest in participative rural development projects based on peasant communities differs from similar past experiences in that it forms part of a broader tendency to decentralize social management, to enhance the role of the beneficiaries of social policies, and to give them a bigger say in their implementation. In order to avoid repeating the failures of past decades in programmes designed to reduce rural poverty, it is necessary to incorporate elements of modern applied anthropology in programmes for the training of extension workers and in the explanatory models of specialists formulating rural development projects. The practical contribution that applied anthropology can make stems not only from the experience of anthropologists in development projects but also, and above all, from a knowledge of the empirical reality revealed by academic anthropology. Although some anthropological concepts are already being used in some other disciplines, they usually correspond to outmoded theories already discarded by many anthropologists. This article identifies some of these "anthropological myths" and explores ways in which the new perceptions of anthropology could be applied to some of the commonest components of rural development projects. The concepts used in this dual task include the development cycle of peasant households, kinship as a reserve of mutual aid, the community as a referent of prestige, and ethnic identity as a social resource.

I

Introduction

Various Latin American governments and the international agencies which deal with the reduction of poverty are displaying considerable interest in community-based participative rural development. This is perfectly natural, since in spite of the high degree of urbanization, poverty in twelve Latin American countries is still a predominantly rural phenomenon (World Bank Group, 1996; Valdés and Wiens, 1996). Neither structural reforms, nor the growth of the product, nor the functioning of the market have been able to bring about a significant reduction in poverty in this sector.

At the same time, there is a long history of defeats in the war against rural poverty, and it is interesting to note that proposals for social investment to resume the struggle are being made once again after the lengthy withdrawal from such efforts that followed the meagre results obtained in the 1970s from the big integrated rural development projects.

The new participative rural development projects centered around communities of small farmers are in no sense "the mixture as before":¹ they only retain a few elements of those integrated projects, because it is considered from the start that the excessive centralization and technocratic nature of the latter raised their cost and adversely affected feedback and the motivation of the beneficiaries (Errázuriz, 1986; Durston, 1988; FAO, 1988).

Nowadays, emphasis is placed on the fact that support programmes for small rural producers must be participative and community-based (World Bank Group, 1996; Banuri and others, 1996). It may be recalled that the few successful integrated rural development programmes shared the common feature of displaying a high degree of real participation of their beneficiaries (Lacroix, 1985).

Although the present proposals may not seem completely new—participative development was in vogue on a number of previous occasions, beginning with the "community development" of the 1960s and

attaining more sophisticated expressions in the late 1970s and early 1980s (Coombs, 1980)—what *is* new is that they now form part of a new general model for the fight against poverty.

Such proposals form part of a more general tendency towards broad and sustainable decentralized management of local resource systems in order to give all the interested parties a chance to participate (World Bank Group, 1996). The concept of participation is now both more complex and more concrete than the optimistic ideological formulations of past eras, and it usually means greater decision-making power—empowerment—for the beneficiaries, greater negotiating capacity, and accountability; the right for them to demand reports (Durston, in the press). This scheme is quite novel because it means that programmes must be propelled and managed mainly by the beneficiaries themselves, rather than by the central government or technicians (Ashby and Sperling, 1992).

The experience of past decades made it clear some time ago that generating and organizing community involvement is much more complicated than many advocates of community participation believe (Coombs, 1980, p. 23). In most rural villages resources and power are concentrated in a few hands, there are few truly democratic institutions, and there are rival factions. Good intentions are not enough to ensure the success of interventions from outside: it is also necessary to take into account the attitudes, sociology, cultural traditions, politics and economic aspects of the community (Coombs, 1980, p. 24).

To be more specific, changes are needed in the local and regional environment to permit the democratization of development and the strengthening of excluded groups as social actors (Fox, 1995), as well as the training of planners and extension workers in the socio-cultural dynamics of peasant society. In particular, it is necessary to understand the social organization and priorities and strategies of the peasants, which may be very different from the schemes proposed by members of urban, developed, "modern" societies.

The anthropological theory of social organization (1961) deals with this elusive reality that lies

¹ "This is not business as usual!", World Bank Group, 1996, p. 15.

between the individual and macro levels (DeWalt and DeWalt, 1992); thus, it offers explanatory and potentially prescriptive contributions which are highly relevant to the new approaches that place the social actors at the centre of proposals for participation (Cernea, 1996, pp. 340 - 352).

Such proposals make it clear that in order to be able to help the rural poor to organize themselves, to understand the policy options before them and to formulate their demands it is necessary to incorporate into the strategies the recommendations made on the basis of research into social relations (World Bank Group, 1996, p. 34). Anthropological research, in particular, has created a body of knowledge on Latin American peasant communities which goes back for more than half a century (from Redfield, 1930, through Foster, 1948, Tax, 1953 and others) and has been enhanced over the years by new findings and scientific debate.

It is quite true that most of this body of ethnographic description, analysis and development of theories is of an academic nature and only indirectly touches upon the practical problems of rural development programmes. Nevertheless, this store of knowledge and theory allows anthropologists to gain access to a wide range of analytical tools and comparative examples which, taken together, enable them to appreciate the complex empirical reality of the peasant world that lies beneath superficial impressions (Cernea, 1996, pp. 340 - 352).

Thus, it shows up once again the falsity of the alleged dichotomy between academic or analytical work, on the one hand, and practical or operational work on the other. The understanding of the realities of poor rural communities made possible by the theoretical models and accumulated knowledge of anthropology cannot be replaced by experience in the field, because on its own this usually merely strengthens a perception of simple models that claim to represent the complex peasant reality. Although professionals in other fields are usually familiar with basic anthropological concepts, these tend to be of an elementary nature and correspond in many cases to outmoded theories already discarded by modern anthropology. Until quite recently, many agronomists and economists dealing with agricultural issues opposed the incorporation of anthropologists into the rural poverty debate, except in respect of a few limited topics, but it is increasingly clear that the new proposals require that extension workers in the field

and experts formulating programmes to combat rural poverty should incorporate into their models and approaches some basic –but not over-simplified– elements of anthropology (Cernea, 1996, pp. 340 - 352).

In particular, there is an increasing awareness of the need to change the approach of agricultural extension activities aimed at peasants. The idea is to get away from the tendency –which is predominant in the traditional academic training of extension workers and planners– to think in terms of a simple one-way transfer of information and techniques to producers who have no knowledge of them or have completely mistaken ideas. This traditional view also assumes that the beneficiaries live in a simple, standard social environment which is the same everywhere and does not warrant much analysis by the experts who seek to increase peasants' productivity.

Although there is an awareness of the shortcomings of this approach and it is known that social and cultural variables can determine the success or failure of a project, there is not such a clear awareness of what those variables are, how they can be identified in detail, and what adjustments they call for in the activities of an actual project.

Here, we have considered some shared perceptions: that we should gain a deeper knowledge of the conditions we aim to change; that the socio-cultural realities of peasant society do not only represent problems and obstacles for the transfer of the productive know-how of the experts, but also strengths and opportunities which should be exploited and strengthened, and that there are abstract elements which are common to the varying cultures and situations of peasants from different parts of Latin America. These common elements make it possible to prepare a common framework for guiding the construction of more complex models reflecting the particular circumstances of each project and each rural community. Some of these elements refer primarily to cultures of indigenous origin, but the processes of syncretism between the original and the Spanish cultures (in the cases of both present-day indigenous peoples and non-indigenous peasants) allow them to be extended to every peasant community in Latin America, as a general framework, for the purpose of analysing each specific situation.

The following sections will try to give a brief definition of the relevant theoretical concepts of social and cultural anthropology: i) the development cycle of the household unit; ii) the community as a

referent of prestige; iii) kinship as a reserve of mutual aid, and iv) ethnic identity as a social resource. They will also seek to correct some common anthropological myths in this respect which are based on outmoded theories already discarded by anthropologists, to link up these concepts within a coherent theoretical framework that can serve

as a guide in the analysis of actual situations arising in participative development projects for small producers, and to set forth some practical connotations of this framework for certain components of participative rural development projects, especially those concerned with organization, extension activities, credit and marketing.

II

The anthropological approach: some fundamental concepts

Their culture and their informal social organization² are factors that determine people's decisions and their relations with larger organizations.

The term "culture" has been incorporated into the modern vocabulary with rather a vague meaning. It is important to develop the concept behind this word more fully from the standpoint of modern anthropology. Every culture has two main components: on the one hand, a view of the world –i.e., a coherent set of beliefs about reality–, and on the other an ethical view: that is to say, a scale of values that determine attitudes to good and evil and a set of rules for people's "proper" behaviour. In order to become a culture, this dual view –of what is real and what is correct or proper– must be shared and transmitted within specific, concrete groups of persons, through a common language. Modern anthropology tends to make an analytical distinction between the concept of culture (an abstract system of ideas) and the concept of social structure (the practices, customs, regular interactions and institutions which exist and are observable in real everyday life).

It has long been accepted that every specialist should have an "open mind" regarding what is taking place in intellectual fields outside the "closed system" of his own speciality (Gluckman, 1964). Even

so, there is a problem of communication among the different professions which stems above all from the frequent fact that even those specialists who have acquired elementary notions of another discipline –such as anthropological theory, for example– usually learn (either from teachers working in their own speciality or from textbooks) outmoded theories which have already been left behind in fast-evolving fields of knowledge. In the following sections we shall summarize and explain these "anthropological myths": that is to say, these beliefs which are widely held but whose bases have been greatly weakened in modern anthropology.³

Anthropological myth: The cultural systems and informal institutions of indigenous and peasant societies are ancestral traditions which have remained unchanged throughout the centuries; contact with the modern economy and society, the mass media, etc. means the destruction of these age-old cultures and institutions.

This belief appears to be the result of the first hypotheses developed almost a century ago by the functionalist school of anthropology. Now, however, we know that, while intercultural encounters always mean tensions on both sides (and in extreme cases may lead to the disappearance of a culture), cultures

² The term "informal social organization" has a connotation in anthropology which is totally different from that used in many development projects, where it means any organization that does not have recognized legal status. Anthropologists, however, apply this term to the stable social relationships among persons which are not always even given formal names but which constitute the social fabric that gives its strength to the peasant community (Firth, 1961; Barth, 1966; Durston, 1992).

³ Truth to tell, almost all the ideas which we have called "anthropological myths" in this article, in order to liven up the analysis a little, still have their supporters among anthropologists themselves, for anthropology, like all sciences, is a battlefield of warring theories. The interpretations favoured in this article are simply the hypotheses that the author himself supports, without losing sight of the fact that today's "truths" may very likely be changed in the future.

have much greater capacity to adapt to changes in the material environment and in the sphere of ideas than they were formerly credited with.

Culture is not, however, a simple and immutable set of rules that can be summed up in a few words. Many anthropologists believe that those rules, as well as being expressed through a language, actually *function* as languages or programmes, comparable with those of a computer in that they are mutable and contain sentences and routines that remain latent and manifest themselves only in the right circumstances. Cultures are constantly changing and adapting their beliefs and rules in response to the changes that are taking place every day in the social, economic and intellectual environment. In this sense, there are no traditional cultures: there is no culture in the world which is the same today as it was a generation ago, or even a year ago. A culture, like a silent language, is constantly evolving as people change the way they use it.

The most novel theoretical proposals put forward an even more dynamic idea of cultures. They see cultures –like ecosystems– as adaptive systems which are in a constant process of change, generated by the co-evolution of the strategies applied by the individual agents of the populations making up the societies involved (Cowan and others, 1995, various articles).

Among the most salient aspects of cultures analysed below are mutual aid and the values of prestige and social status; among the institutional forms of social organization, special emphasis will be placed on the difference between household and family and the development cycle of the household; on kinship and kindred; on “diadic contracts”; on mutual support groups connected with the clientage of the so-called “big men”, and on the community as referent of prestige and as the context for the taking of decisions.

III

The development cycle of the household and the life-strategy of the head of household in the management of peasant holdings

1. Contributions and limits of the approach based on systems of production

Let us start out from the assumption that rural development projects are based on a view of the peasant holding which is rather special in terms of economic theory because it differentiates this type of holding from a conventional capitalist agricultural enterprise. In other words, let us assume that the readers of this article share the view that the main object of decision-making in the peasant economy –the family farm– combines an income-oriented logic with a consumption-oriented one, since its labour force are also the owners of the enterprise. Unlike a capitalist enterprise, the management aim in the family farm is not to reduce the cost of its own labour force, and neither can it lay off staff when labour needs go down.

Anthropological myth: For some theoreticians of agricultural economics, the peasant unit follows a special rationale whose sole aim is reproduc-

tion and not accumulation of capital; consequently, once the basic needs for the social reproduction of the household have been satisfied, peasants will not keep on producing in order to accumulate capital, especially if this means taking risks. This view of peasants as being reluctant to participate in agricultural development is further strengthened by the first anthropological myth, referred to earlier, which considers peasant culture to be an immutable ancestral system and sees peasants as lacking in entrepreneurial spirit, averse to taking risks, and generally “resistant to change”.

This image of peasants appears to stem from a mistaken reading of the Russian rural sociologist Chayanov, although it also concurs with stereotypes deeply rooted for many decades past. It is also strengthened by fragmentary and anecdotic observations of the behaviour of some peasants. Thus, it is quite true that many poor peasants are averse to

taking risks, many slacken the pace of family labour if their basic needs have been satisfied, and many are resistant to change, but these forms of behaviour are circumstantial and are not essential features of peasant culture.

For example, many anthropologists consider that nowadays a tendency to give priority to mere subsistence appears to be due largely to the need to minimize risks in the poorest households when their physical survival itself is in the balance (Durstun and Crivelli, 1984). In many of these communities, however, there are "rich peasants" who have made some progress in a process of sustained accumulation. Reduction of the pace of family labour takes place when it has been possible to overcome a situation of excessive self-exploitation, after which the demands on the labour of the smallest children can be reduced and normal standards for the sexual division of labour can be applied, leaving the women to look after the home, the family vegetable garden, and the barnyard.

Resistance to change and innovation, for its part, is almost always due to some older peasants, for the younger ones are usually very open to new ideas. For many years this has been interpreted as evidence of the recent penetration of "modern" culture in the new generation. However, the repetition of this phenomenon in successive generations of young peasants supports the hypothesis that it is rather a question of the typical characteristics of different stages in life (Durstun, 1996) and that old peasants who stick to rigid formulas today do so because they are old: when they were young they may have been rebels and innovators, sometimes imposing formulas which were new in those days but are now unsuited to present-day conditions.

Whether for reasons of survival or of accumulation, peasant units apply various "systems of production" which combine multiple purposes and products. A basic error in rural development programmes is to treat the various family farms of a community or region as if they were homogeneous, instead of differentiating them into a manageable number of types or models of production systems (see DeWalt, 1985; Van Alphen, 1994).

In the following pages we shall analyse the question of the multiple objectives—especially the non-economic ones—which guide the taking of decisions in the management of peasant family enterprises

and of the social resources that such enterprises mobilize in their strategies, which are both economic and social.

From an analysis of systems of production, it may be concluded that formal multi-purpose organizations (cooperatives and committees) are useful for coordinating self-help efforts to overcome rural poverty, but the fundamental decision-making units are the family farms. As these farms have quite varied types of systems of production (for ecological or social reasons, or for reasons connected with the life-cycle of the head of household), their objectives do not always coincide. The level of participation in the pursuit of a given common production objective, even when this has been decided upon democratically in the organization, is bound to be low in the case of farms whose systems of production do not include that objective in their strategies. Consequently, for certain specific objectives it is better to encourage the spontaneous emergence of interest groups among farms with the same type of system of production (Van Alphen, 1994). To a large extent, then, work with such groups must be flexible in terms of time, must fit in with the demands formulated by the peasants themselves, and must seek to encourage the formation of interest groups corresponding to the various systems of production.

One of the limitations of the approach based on systems of production is that the analysis usually only includes the economic objectives of the farm. Research and the formation of theories along anthropological lines can make some of their most important contributions in this field by revealing how social objectives strongly condition decision-making in peasant households.

2. Social factors in peasant decision-making

There are various levels of definition of the "decision-making unit" in peasant society, ranging from the individual, through the nuclear household, the extended family and informal mutual support groups, to the community itself. All these "units" of different levels of aggregation influence each other in their decisions. Another of the contributions of the approach based on systems of production is that it has corrected the traditional practice of considering the "farmer"—that is to say, the head of the family—as the only interlocutor. Today, the other members of

the household are beginning to come forward out of the shadows: nowadays, studies take into account the farmer's wife and, to an incipient extent, young people too (Durston, 1996).

Nevertheless, at the minimum level of decision-making –that of the individual– it is the head of the household (usually male) who interests us most in this analysis, because in Latin American peasant society it is his objectives (material and social) which predominate in the economic strategy of the household. This is “the other side of the sex-based approach”: the current efforts to overcome the traditional “invisibility” of peasant women (Campaña, 1994) must not lead us to neglect the due analysis of male roles and their incorporation in the planning of development project activities.

In reality, there is no equality of the sexes in decision-making in peasant culture: neither in indigenous culture nor, even less, in non-indigenous peasant life. The head of the household is the dominant actor in defining the objectives of the family enterprise, which are usually also accepted by the other members. Unlike what happens in a truly commercial enterprise, the social objectives of the head of household –fulfilling religious duties, financing the studies of the children, providing a good dowry for a daughter, leaving the children something to inherit and, above all, amassing social prestige in the community and the area– are just as important as increasing profitability or capital, if not more so.

Although the objectives of the head of household are processed through negotiation with the other members of the household, and although they derive partly from his affective relationship with them, it is the head of household who represents his farm, not only for traditional planners but also for society; he is also the figure who represents his whole nuclear family in the social hierarchy of the community. Consequently, the productive activities of the family farm and the participation of each family member in them are aimed largely at achieving the personal objectives –whether material or symbolic– of the head of household.

3. What is a “family”?

It is extremely important to distinguish between two terms which are very often used as though they were synonyms: family and household. However, house-

hold is not the same thing as family: whereas “household” is a unit of residence and consumption in which there is usually only a single consumption budget and all its members normally prepare and eat the same meal, “family” is a broader concept which overlaps in everyday language with the idea of “household” but actually has less clearly marked limits. The picture becomes even more complicated when we note that both households and families are very often described as being “nuclear” or “extended”. Even social science publications do not use these terms in an agreed, standard manner, so that each author should really make it clear what definition of them he is using.

Anthropological myth: Social scientists who are not themselves anthropologists very often use a simplistic scheme in which the extended family and household are equated with “tradition” and with indigenous culture and rurality, while the nuclear family and household are seen as typical institutions of modern, urban western culture.

The first danger involved in this scheme is that of confusing the concept of family (as a group of related persons) with the idea of household (as a domestic and residential unit). It is the latter institution which is registered by censuses and household surveys: indeed, the statistics almost always speak of households and not of families.

The second point is that the simple dichotomy posited by this myth does not correspond to reality. In many countries of the region there is a higher proportion of extended households in urban areas than in rural ones, due to the higher cost of urban housing.

Furthermore, the extended household –the residential unit which includes, in addition to the nuclear household, other relatives of the head of household, usually daughters-in-law and grandchildren, aged parents or in-laws– is less common than the nuclear household in rural areas of Latin America. This is not because rural society has become more “urbanized” or “modern”, but because the extended household represents a stage or phase in the long normal development cycle of the household, in which children of the head of household have got married and are temporarily living with their parents until they have enough income and savings to obtain a home of their own. Ethnographic studies carried out in a large number of traditional peasant communities all over Latin America more than half a century ago registered a majority of nuclear households, just like today.

Consequently, the fact that most of the households in a peasant community are nuclear does not mean that that community is losing its traditional culture. By the same token, it is likewise not true that the extended family is now disappearing from peasant society: mutual aid among close relatives continues to be important, even though they may not live in the same household, but it takes different forms from those of yesteryear. The most accurate term for referring to this abstract concept of "family" or "parents" is kinship, and as we shall see below, kinship is the main foundation of the relations between persons on which mutual aid is based.

Here, we have preferred to associate the concept of household with that of the farm, with a head of household who is the farmer "managing" the farm. In view of the importance for the household of the life cycle of this personage, we are particularly interested in analysing the nuclear unit: that is to say, the head of household and his wife and children. The term family will be used here to refer to close relatives who usually aid each other because of their links of common descent or matrimony. The practical connotations of these definitions may be appreciated from the following diagram (the nuclear household always exists, but in order to avoid confusion we shall refer to the nuclear family, since in practice it coincides with the nuclear household):

	Household	Family
Nuclear	Always exists	Abstract concept
Extended	Temporary phase in the life cycle	Always exists

4. Life cycle of the head of household and development cycle of the household

It is worth emphasizing how important the age factor is in this context –i.e., the ages of the persons involved and the economic and social changes associated with their evolution– as this variable is almost always omitted from the conceptual frameworks of rural development projects (Durston, 1996). Thus, solely with regard to the question before us at this moment –the strategy of the head of household– we may say that as the head of household advances in his life cycle there is normally an increase in his

capacity for autonomous decision-making, in the ratio between the active labour force and dependents, and in the resources accumulated by the head.

Because of the high degree of identity between the objectives of the peasant farm –the "enterprise"– and the personal objectives of the head of household, there is a similarly close correlation between his life cycle and the development cycle of the household.⁴ In other words, we can describe this latter cycle in relation to the age of the head of household.

Strictly speaking, the most important thing here is not the chronological age of the head of household, but the sequence of stages in the normal life cycle of male peasants: dependent childhood, the stage of going to school, the stage of acting as the father's helper in productive tasks, the stage of partial economic independence, and the stages of newly-married man, father of young children, head of an adolescent family labour force, head of an extended household, the stage of increasing loss of control over the work of sons who are now grown-up, the stage of giving land to the sons as a gift or advance legacy, and finally the stage of dependent old man.

Any of these stages can take place at different ages or simply not take place at all in particular cases; there are only statistical trends pointing to a common age cycle for all, although these trends may be strongly marked in a given peasant community or regional culture. In operational terms, it may be more exact to take the age at which the head of household got married, or his age when his first child was born, as the starting point for the development cycle of the household.

As a dominant trend, as the life cycle of the head of household advances, so too there is a gradual increase, in the development cycle of the household, in both the number of members and the ratio of active workers to dependents and to the area of land owned. The values of these display similar curves, with peaks at points between 40 and 60 years of age of the head of household. Finally, "demographic differentiation" puts an end to the potential social inequality involved in this concentration of resources, through the division of the capital among several children by inheritance.

⁴ For more details on the development cycle of the household, see Goody (ed.), 1958.

IV

Social prestige, the community and changes in the probable levels of priority of objectives

1. The prestige of the head, as an objective of the household

The economic approach to peasant farms acknowledges that they establish a scale of priorities for the various economic and family objectives that guide their production decisions. Studying the development cycle of the household helps to understand how the non-economic or "family" objectives change with the different stages in that cycle. The priorities laid down by the head of household evolve from the top-priority objective of subsistence/consumption in the case of a young head, via the objective of accumulation or expansion of capital under a middle-aged head, to the aim –when the head is of advanced age– of maximizing his own prestige by a combination of wealth, generosity and service.

The importance of prestige in peasant communities is generally underestimated in rural development projects, partly because it is a non-economic objective, but probably also because the planners of such projects have accepted the stereotype of peasants who are essentially equal to each other –that is to say, equally poor. At the same time, a technician or professional, looking down from a higher social position, may underestimate the degree of respect and admiration that a peasant may enjoy among his peers. Finally, the scale of values determining an individual's prestige is different from one cultural context to another, although the three factors mentioned in the preceding paragraph are essentially universal.

2. The rural community as referent of prestige

In poor peasant areas of the Andes, Mexico and greater Central America, prestige and status (the social rank resulting from the prestige won by an individual) have traditionally been associated with the

fulfillment of a number of civic and/or religious "offices" which demand a great deal of material resources and time from the head of household.

Anthropological myth: A hypothesis put forward in early anthropological studies which turned out to be false in many cases was that expenditure on parties and other social events had the effect of levelling-out personal wealth, by demanding bigger expenditure from men who had managed to begin an accumulation process that could result in their social differentiation (levelling mechanisms).

We now see, on the contrary, that the expenditure of both money and time served as investments in prestige and undefined mutual aid (see below) which paid subsequent economic dividends: the expenses associated with the "offices" (officer of a fraternity, leader or member of some community group, etc.) did not in fact bring the holder down to the common level of poverty. Although a household's capital and level of consumption might go down in the year following expenditure on some civic or religious office, in the long run the head of household would increase his prestige and material fortune.

These traditional formal posts of honour, whose occupation used to be the most visible sign of the prestige of a head of household, have undergone great changes in recent decades, as for example in western Guatemala. In that country (except for some formal political posts whose importance has continued and increased), two new formal institutions have increased their presence in this field: evangelical sects, and international development or aid projects. Many of the activities of the old syncretic civic/religious system which, half a century ago, allowed a head of household (with sufficient land, grown-up children and savings) to show his spending-power and his devotion to his fellow-men have now been supplanted by the occupation of posts in

evangelical movements, in the new Catholic lay organizations, or, increasingly, as committee chairmen, promoters or other capacities in connection with international development aid projects. According to

some analysts (Stall, 1993), these posts –which also hold out the hope of clientage benefits– are now emerging as the new “offices” for giving community prestige to heads of peasant households.⁵

V

Mutual aid and the Ego-centered network of kinsfolk as social resources

1. Mutual aid: the main social resource of the household

In addition to its own material and human resources, the household/farm has an important class of social resources which consists essentially of the ties that strengthen cooperation. Unlike other social media, and in contrast with some stereotypes of peasant cooperation, these resources are based not so much on impersonal solidarity in a broad context as on interpersonal ties of concrete, specific individuals.

Perhaps the most important concept for understanding peasant culture better and going deeper than outside appearances is the concept of non-defined mutual aid. Although mutual aid is a form of exchange, it is not so much an economic transaction as a repeated exchange of gifts and favours without any immediate or well-defined compensation (that is to say, “non-defined”), in which each expression of aid reaffirms and strengthens the mutual confidence between the two persons involved.

This brings us to another important aspect of peasant mutual aid: this is not a group relationship (or if it is, it is a group relationship only through a set of individual relationships), but a relationship based on a standing implicit accord between two persons: what Foster called a “diadic contract” – a completely informal contract which is “diadic” because it is between two parties (Foster, 1961, pp. 1172 - 1192). These non-explicit contracts between two persons to help each other in times of need and in economic ventures where there is an element of risk are to be found above all in environments where the law has only a feeble presence and where some personal assurance of good faith or confidence in the solidarity of the other person is needed. In all cultures, but

especially in peasant culture, the shared ethics give rise to a strong sense of duty to aid relatives (especially close relatives of common descent) and to be honest and self-sacrificing with them. This non-defined mutual aid is strongest among relatives, but it also extends to friends of many years' standing, where it is formalized and strengthened in religious terms by acting as godfather, best man, etc., at christenings, weddings, and the like.⁶

Anthropological myth: The institution of non-defined mutual aid prevents a peasant who manages to save from investing and building up capital in order to grow as a family enterprise. The demands of his duty to provide mutual aid to his relatives oblige a hard-working peasant to immediately share his savings with his less fortunate relatives.

In order to refute this old belief, which underates the self-development capacity of the family farm, we must go more deeply into the nature of the mutual aid networks among Latin American peasants.

⁵ This is only one of various recent past changes that must be taken into account by project personnel, not as a mere background to the present situation but as dynamics of social changes which are under way. Another element is population growth during the last generation, which, because of its effect on the population burden on productive land, has changed (among other things) both gerontocratic authority in the household and the political relations in the area. Because of their ongoing effects in the economic and social sphere, these past processes still affect the work of staff in the field, who must be familiar with their evolution in the recent past in order to understand them properly.

⁶ These bases for mutual aid are so closely assimilated to blood relationships that godfathers, best men, etc. have been called “pseudo-relatives”.

2. The kinship network: a reserve of social resources

Although the strongest and most reliable stable mutual aid relationships that an individual can have are those with his relatives, not all relatives are active participants in "diadic" relationships with a given individual (in anthropological jargon, an "Ego"). On the contrary, the known and recognized relatives of an Ego are no more than a potential reserve of mutual aid relationships: interaction with many relatives is only sporadic and casual, and the relationships with some of them are conflictive and rule out stable mutual aid, with its positive affective charge. Moreover, as the set of people who occupy the roles of relatives (brothers, uncles, brothers-in-law, etc.) is objectively different for different individuals, this network of potential social relationships is "Ego-centered": each Ego is at the centre of a web of relatives disposed in concentric circles, which overlaps and intersects with the networks of relatives of the other Egos in the same community.

3. Kinship groups, support groups, and "big men"

Out of this abstract network of potential relationships (to which must be added neighbours, friends and members of the same generation as the Ego), each head of a peasant family maintains active relations of non-defined mutual aid with a much smaller Ego-centered network. At the same time, he naturally participates in the Ego-centered networks of his relatives. These networks of real exchange relations among relatives have been termed "kinship groups". The fact that these kinship groups overlap with each other in a dense web of mutual aid relationships, with constant exchanges of aid, is what gives a kind of invisible solidarity to the community which is much stronger than that which could be provided by an abstract sense of common social interests *vis-à-vis* the rest of the world.

Kinship groups are not "social groups" in the strict sense of anthropological and sociological theory, because this latter concept denotes something more than a dispersed network or a mere category of similar persons: a social group is a set of people with stable interaction relations which has clearly perceptible frontiers that distinguish its members from other persons who are not members of the group. Conse-

quently, Ego-centered kinship groups have been called "quasi-groups" (Mayer, 1966).

Very often, however, kinship groups form the basis for true social groups, whose presence has important implications for any attempt to intervene in a peasant community where such groups exist. These "real", though informal, social groups are support groups for specific notable individuals who in some cultures (such as Andean communities, for example) are called "big men" or something similar. These quasi-groups, in contrast with the myth that there is social pressure to share any savings, help peasant households to accumulate capital and grow as enterprises, through the contributions of labour of the mutual aid network. In return, the younger or less enterprising relatives enjoy the certainty that the "big man" will give help at times of need.

Anthropological myth: Mutual aid relations in peasant or indigenous societies are all horizontal: i.e., among equals.

As we have seen, the prevailing tendency is for older heads of households to have more resources and higher status than young people in general, which gives rise to "vertical" or patron-client mutual relations. In western Guatemala, mutual aid between unequal persons is also based on a sometimes very strong form of social stratification within the indigenous community, with abundant goods and high status being bequeathed by some fathers to their sons.

In the final analysis, many "big men" run relatively stable and well-defined support groups, based on their own kinship groups but expanded by godfather-type relationships with various non-relatives. These groups act as expanded economic enterprises and as factions or cliques that support a particular man in the competition for prestige within the community. As their members cannot at the same time be members of the kinship groups of rival prestige-seeking men,⁷ it is conceptually valid to speak of true social groups in these cases. In some communities there is only one "big man", who has stood out over the others. In other communities, there may be two or more, all with their respective support groups based on horizontal and vertical mutual aid, thus giving rise

⁷ Prestige, unlike capital (which can be generated or created) and more so than in the case of land, is an "absolutely limited good", since only one person can be the man with the highest prestige in a given community.

to conflicts between factions in the economic, political and organizational fields. Moreover, in many cases there is the paradoxical situation that, in order to strengthen commercial links, there may be god-

father-type relationships with outsiders from non-peasant social strata, who are sometimes the same people who have robbed the community of land or the proceeds of produce sales.

VI

Ethnic identity as a social resource

There can be no doubt that ethnic differences of identity and culture strongly condition any attempt to modify the situation of indigenous peasants. The most obvious importance of the differences between indigenous and non-indigenous peasants lies in the fact that both their interpersonal relations and the views of reality and scales of values that guide the individual behaviour of these two groups follow profoundly different specific patterns. At the same time, however, it may be noted that "indigenous" status is the result of lumping together a wide variety of original peoples and relegating them all to a status below that of the "Spanish", "criollo" and "mestizo" colonial strata.

1. Ethnic identity and social organization

The influence of indigenous culture and social organization is clearly important for participative development projects, and it is usually manifested in difficulties in setting projects in motion in what have been called closed corporative indigenous communities, which operate as defence mechanisms against the economic inroads of the dominant society, sometimes in veritable isolated regional strongholds.

Attention to special ethnic aspects should not be limited, however, to anthropological prescriptions which might be given for overcoming resistance to the presence of a project or to the adoption of the innovations it seeks to promote. In many cases, reluctance to go along with innovations is based on realities which the project itself will be obliged to identify and understand in order to modify its own proposed innovations; in other cases, it reflects well-founded caution about changes which may jeopardize the very survival of the community.

However, the most tightly closed indigenous communities are usually highly corporative, in the

sense of forming a true "body" in which collective action is very effective. In such cases, it is important to become familiar with the informal organizations (in the strict sense) and their religious and mutual-aid-linked bases, in order to stimulate the real leadership of the community in the right direction with suitable support from the project.

There are other elements of ethnic differences which it is even more necessary to analyse in a peasant development project: inter-ethnic relations, and ethnic and cultural identity. In all societies of the world there is some degree of ethnic-based prejudice and discrimination; even where ethnic frontiers are blurred indigenous peoples are affected by a dominant alien culture which, as well as depriving them of access to material resources (IFAD, 1993), also bombards them with messages about their alleged inferiority.

2. Ethnic identity and development

In development projects, then, there are two aspects connected with ethnic issues which it is difficult but very necessary to tackle. Firstly, the project takes place within an ethnically unequal power structure which makes it harder to achieve its higher objectives, and moreover most of the officials of the project belong to the dominant ethnic group and speak only the language of that group.

Secondly, the dominant culture transmits to the indigenous culture its perception that the latter is inferior, either in a frankly racist manner, or by taking an "enlightened" attitude which assumes that Western knowledge has a monopoly of the enlightened truth, while the indigenous culture is implicitly seen as a stronghold of ignorance and superstition. The danger is that implicit attitudes which reflect the innermost views of some extension workers or other officials may give the impression that the project

claims to offer "superior" forms of knowledge and power and that indigenous groups are seen as ignorant. This attitude, which is sometimes quite unconscious, has its worst effects when it is internalized and accepted by indigenous persons themselves, who end up denying their own ethnic identity (Adams, 1990, pp. 197 - 224).⁸

A clear sense of identity is a basic human need as important as food itself. A positive self-image which includes a sense of belonging to a sector of mankind perceived as worthwhile is essential as a motive for self-esteem, particularly in the adolescent phase of formation of the adult personality. Fortu-

nately, all over Latin America there is a recent trend towards the formation of positive self-images based on indigenous ethnic identity. As the problem is still very real, however, a development strategy which ignores it would jeopardize the attainment of the project's objectives (Kleymeyer, 1993; Partridge and others, 1996).

For the full application of an analysis of ethnic issues, it is also necessary to develop objectives aimed at strengthening the local culture and promoting indigenous self-management, but these subjects are outside the scope of the present paper, which is of an introductory nature.⁹

VII

Some practical connotations

Some of the anthropological concepts summarized in this article may be important for specific areas of the practical activities of community-centered participative rural development projects: for example, for classifying households or farms, for analysing probable systemic impacts of project activities, for forming organized groups and, as we shall see below, especially for those project components connected with organization, extension, credit and marketing.

The concept of the life cycle is particularly useful in practical terms for the *organization* and *training* components of the projects in question. Young adults who have more schooling and are easier to train rarely have a high level of authority, prestige or power. They can be trained as technicians, and it is important to give support to their medium-term training, as possible future leaders. But they are also the kind of young people most likely to migrate, because they have fewer possibilities of managing local resources at this stage of their life cycle.

With regard to the *credit* component, men aged around 35 to 45 are those most interested in investing. It is hard for young people to do this because they are poorer, they are concerned primarily with survival, or they prefer to migrate. However, making credit available to young people may stimulate ad-

vance inheritance in order to procure more resources for the household. The mere hint of possibilities for investment through a project can cause migrants to return. As young people have new ideas on consumption and independence, they are most likely to be interested in proposals for generating new local sources of income rather than emigrating.

Furthermore, the prestige of a post associated with the project can be a powerful asset of the *participation* component, if properly analysed and exploited.

Familiarity with the informal social *organization* is essential for working with a participative approach in each specific community to reduce rural poverty, because specific relations cannot be predicted exactly on the basis of a conceptual framework or knowledge of similar communities. It is a positive factor for the project's activities when the potential for cooperation goes beyond the interest group based on farm systems and the support group, kinship relations and vertical mutual aid all lead to multi-faceted forms of cooperation which go beyond the limits of a single production model.

It must be borne in mind, however, that the dynamics of cooperation on a scale larger than that of the mutual support quasi-group involve other criteria for consolidation. Cooperation among people with no

⁸ As Adams points out—in keeping with the definition of culture given at the beginning of the present article—cultural change does not necessarily mean the loss of indigenous identity.

⁹ For a diagnostic study and proposal regarding the IFAD projects with indigenous peoples, see Helms, 1994.

prior mutual aid relations calls for the constant repetition of joint actions in order to test and strengthen the confidence in members of other (rival) mutual aid groups as well as to confirm (through repeated tests) the faith in the aims of the project and the capacity of its staff.

In the *organization* component, it is important to remember that the selection of young people by the community as leading officials of organizations promoted from outside is no guarantee that they really have the authority that their posts would appear to give them. The men with the highest prestige often do not hold formal posts in the community: young people may enjoy their support because of their knowledge of the non-peasant world, but they may be merely “ambassadors” or “foreign ministers” of the real, informal rulers of the community, who are often not familiar with the language of the dominant culture.

The *marketing* component is of key importance for the success of projects to combat rural poverty, because it has the potential to secure a significant improvement in the prices received for crops even in the first year of activity of the project. However, the formation and functioning of marketing committees raises a number of complications for whose solution the anthropological concepts of kinship, quasi-groups and patron-client mutual aid may be of key importance.

Thus, for example, when a group of peasants start their own marketing activities under the auspices of the project, this may break the relations of dependence and exploitation which existed with intermediaries who took advantage of mutual aid links for that purpose. The main challenge is to establish mutual confidence among the peasants involved, because they will have to entrust their products to some of the members of the marketing committee who are

responsible for delivering them to a reception centre and finalizing the sale. Clearly, kinship groups provide a basis for such confidence, but usually not all the members of a kinship group produce and market the same crops. Consequently, marketing is an ideal activity for trying to extend the cooperation typical of kinship relations to broader interest groups.

Marketing can also be fertile ground for helping to reduce to some extent the total predominance of the life strategy of the male head of household compared with that of the women. In many peasant cultures, retail commerce (selling small amounts of produce to consumers at regularly-held fairs and markets) is a traditional activity of adult women. Moreover, generally speaking their own production of small livestock, vegetables, handicraft articles, etc., belongs to them personally, as do the proceeds of its sale. Thus, the formation of marketing committees made up of women, as well as “women’s banks” organized around these production activities, is already culturally sanctioned as something traditional and acceptable.

Finally, with regard to the *extension* component, the key anthropological concepts set forth in this article must be assimilated by the extension workers, but something which is even more important is that they should accustom themselves to think like researchers, cultivate a sense of curiosity to learn more, try to understand peasant life better, and not merely limit themselves to transferring technical know-how. This involves collecting data, improving and enriching their own models of production systems, and being conscious of their ambivalent role: as non-indigenous public officials, usually quite young, their prestige—in a post obtained despite their relative youth, and independently of their professional knowledge—will depend on their spirit of service and the power of the project *vis-à-vis* the State apparatus.

VIII

Final comments

It is hoped that these notes may be useful for participative rural development projects, because the planning of production itself, and especially the analysis of the difficulties which are inevitable in the operation of any project, demand that the analysis should not be limited to a standard “small

producer” model but should cover the special socio-cultural conditions of Latin American peasants. The main objective in drafting this paper has been to help to develop the analytical capacity of non-anthropological staff of rural development projects—especially among the extension workers,

who are the key human factor in any rural project—and to stimulate among them a concern to develop more sophisticated models of the actual conditions they seek to change.

It does not seem overly ambitious, however, to think in terms of also developing the capacity for analysis of the beneficiaries of rural projects themselves. They will need this capacity when outside support is withdrawn and the specific system of production, credit, organization and marketing that a project leaves behind it begins to falter because of

the changes which will sooner or later take place in the environment and which will oblige the peasants to review their approach in a hurry. It does not seem at all utopian to believe that the peasants of today—indigenous and non-indigenous—will be able to carry out the necessary analysis and management actions if the know-how transferred to them is not limited to purely technical matters but also includes training in management and the taking of decisions in a changing context.

(Original: Spanish)

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Biodiversity prospecting: *a new panacea* for development?

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Biodiversity has been touted by some as the developing countries' new competitive advantage because these countries have sovereignty over the majority of the world's biodiversity, the value of which is yet to be determined. Biodiversity prospecting is the examination of biological resources in search of active compounds for pharmaceutical development, agricultural and industrial use. In this article, five cases of biodiversity prospecting are described, their future prospects are analysed, and policy options for other institutions and countries interested in pursuing such prospecting are discussed. The market for essential oils (particularly for cosmetics), phytopharmaceuticals and herbal preparations, agricultural chemicals, and industrial enzymes is much greater and easier to get into than that for new compounds to be tested for possible pharmaceutical use. The long testing period for pharmaceuticals makes immediate returns unlikely, though there is long-term potential. Moreover, there are important spillover effects for other economic sectors, particularly agriculture and industry, because of the scientific capacity that has to be developed in order to add value in the various stages of the biodiversity prospecting and drug development process. Initial findings indicate that biodiversity prospecting can be beneficial for developing countries provided they already have or can establish the relevant scientific infrastructure, intellectual property laws, conservation areas, good negotiating skills, and the political will to collaborate both with each other and with industries in the developed countries.

I

Introduction

Biodiversity has been touted by some as the developing countries' new competitive advantage because they have sovereignty over the majority of the world's biodiversity, much of which is still unknown to science and the value of which is yet to be determined. Biodiversity prospecting –the exploration of biological resources in search of active compounds for pharmaceutical development, agriculture and industry– has captured the imagination of many scientists, policy makers and environmentalists. Interest has primarily been in medicinal plants and natural substances that have biological activity, because “rational drug design” using biochemistry and supercomputers has proven more complicated than it was once thought. Biodiversity prospecting, then, is seen as a way of preserving biodiversity because of its potential economic value in the drug discovery process.

Other reasons why biodiversity prospecting is in vogue include the fact that “more than 60 per cent of the world's people depend directly on plants for their medicines: the Chinese use more than 5,000 of the estimated 30,000 species of plants in their country for medicinal purposes. Moreover the great majority of Western medicines owe their existence to research on the natural products that organisms produce: for example, natural products played a role in the derivation of each of the top 20 pharmaceutical products sold in the United States in 1988” (Raven, 1994). Ten of the top twenty-five best selling drugs in the United Kingdom in 1993 were also derived from or inspired by natural sources (Ten Kate, 1995, p. 10). Arguments both for saving biodiversity because of its future potential and for searching through it using advanced scientific techniques cite estimates that “less than 10% of the estimated 250,000 flowering species in the world have been examined scientifically for their potential in medicine” (not to mention other forms of biodiversity) and that by the year 2050

one in four of the higher plants will probably have become extinct before their medicinal potential has been explored.¹

Perhaps most important from the pharmaceutical perspective is something that was pointed out by Dr. Gordon Cragg, Chief of the U.S. National Cancer Institute's Natural Products Branch: “no chemists can ‘dream up’ the complex bioactive molecules produced by nature, but once the natural lead compounds have been discovered, then the chemists can proceed with synthetic modifications to improve on the natural lead.”² Biodiversity prospecting is useful for the further development of natural leads, but even more importantly, for providing chemists with ideas that may form the basis of their computer-aided search for interesting chemical structures that may prove useful in drug development.

While continuing to use supercomputers for drug design, various pharmaceutical companies and research institutions have fostered agreements with scientists in developing countries for the collection and identification of samples from plants, microorganisms, insects and marine life. With very few exceptions, the source country provides samples to be sent abroad for screening for potential biological activity.

News of the first agreement between Merck (one of the world's largest pharmaceutical companies) and the Costa Rican National Institute of Biodiversity (INBio), that provides for the payment of US\$ 1 million to INBio for biodiversity prospecting services over a two-year period, has led to debate and controversy as well as raising hopes and fears of similar possibilities throughout the Western Hemisphere. Unfortunately, much of the discussion of the Merck-INBio agreement by those not directly involved in it has been based on incomplete, erroneous or totally false information.

□ This paper was revised and updated for *CEPAL Review*. The original paper, “Biodiversity Prospecting: Potential and Realities”, was presented at the Genetics Society of Malaysia Post-Congress Workshop on Prospects and Problems of Biodiversity Prospecting, Kuala Lumpur, Malaysia, 9-10 November 1994.

¹ Akerele, cited in “*The Lancet*”, 1994, p. 1514.

² Cited in Raven, 1994, p. 7.

In this paper, I will briefly describe some cases of biodiversity prospecting in Latin America –particularly the Merck-INBio accord– and analyse their future prospects. In the final section I will discuss policy options for other institutions and countries interested in pursuing biodiversity prospecting. The research for this article was based on an examination of much of the existing literature (published and unpub-

lished), interviews and discussions with key actors in this field, and my work organizing the interdisciplinary symposium on Biodiversity, Biotechnology, and Sustainable Development in Health and Agriculture, organized by the Pan-American Health Organization (PAHO) and the Inter-American Institute for Agricultural Sciences (IIASA), and editing the proceedings of that meeting (Feinsilver, ed., 1996).

II

Biodiversity prospecting experiences and models

Biodiversity prospecting has occurred since time immemorial, but the actual term is of recent vintage. Before publicity about the 1991 Merck-INBio contract, the Rio Summit in 1992, and the publication of *Biodiversity Prospecting* in 1993 by the World Resources Institute (WRI) *et. al.*, collectors of samples of biological resources either worked directly for institutions and companies in the developed countries, or sold their wares to them. Some of the worst offenders, from the developing countries' perspective, were the major botanical gardens, which worked directly with pharmaceutical and agricultural seed companies. The profits from the products developed from these resources also remained abroad, thus giving rise to the term "biopiracy".

Since the Rio Summit, however, many source countries have established or have made more stringent regulations on the collection and exportation of biological resources, in an effort both to exercise greater control and to capture some of the economic benefits realized. The creation of Costa Rica's National Institute of Biodiversity (INBio) was a milestone in biodiversity prospecting, because INBio provides direct returns to conservation from prospecting and seeks to be a model for others. The brief case descriptions that follow will give an idea of the possible benefits to source countries of different types of biodiversity prospecting arrangements.

1. Costa Rica's National Institute of Biodiversity (INBio)

INBio was established in 1989 by governmental decree as an autonomous, private, non-profit, public interest institution with the support and collaboration

of the Ministry of Natural Resources, Energy and Mines (MINEREM) in order to prepare an inventory of Costa Rica's biodiversity and develop means for its conservation and sustainable use and development. This non-governmental institutional arrangement was designed to promote operational agility and flexibility and to facilitate the search for external sources of funding. INBio's great flexibility has enabled it to take advantage of funding from foundations and NGOs that would not have been available to it had it been a governmental agency.

On the other hand, INBio's non-governmental character has caused some concern, precisely because –although INBio is not directly under government control– it is managing the country's biodiversity information systems and collection of specimens and is perceived to be "selling" the country's biodiversity, although this is not the case. The fear is that the lack of direct accountability may not be in the country's best interest, despite the current management's public-mindedness. Moreover, there is considerable concern about what will happen in the future when INBio's management changes or when the opposition party comes to power again, thereby changing INBio's relationship with the government.³ When Mexico established an INBio-like institution with direct assistance from INBio, it opted to make CONABIO (the National Commission for the Knowledge and Use of Biodiversity) a governmental agency charged with the preparation of an inventory and conservation but not, as yet, bioprospecting.⁴

³ Interviews with scientists of various institutions in Costa Rica, August 1993.

⁴ See CONABIO's information brochure.

Although biodiversity prospecting is the best known division and activity of INBio, it is only one of four interrelated divisions and activities of INBio, the others being: i) preparation of a biodiversity inventory, ii) biodiversity information management, and iii) biodiversity information dissemination. Biodiversity prospecting's role is to find novel sustainable uses for biodiversity so as to provide some of the financial resources needed to sustain the other divisions' activities, particularly the inventory, which is the basis of all of INBio's work for conservation.⁵ A full discussion of all of INBio's activities is beyond the scope of this paper and is available elsewhere (Sittenfeld, 1993 and 1994; Aylward, Echeverría, Fendt and Barbier, 1993).

INBio's biodiversity prospecting activities are based on the comprehensive knowledge of certain important segments of Costa Rica's biodiversity that is available from its inventory and INBio's and Costa Rica's scientific capacity in related disciplines. INBio conducts "biodiversity prospecting for chemical compounds, genes, species, macro and micro-organisms in collaboration with local and international universities, research institutions and industries...[through] random, chemotaxonomic and ecologically guided sample collection and the collection of natural history, behavioural and ecochemistry data".⁶ It also provides consulting services to other institutions in the field of biodiversity prospecting. In fact, one of INBio's most successful "products" is the idea of INBio-like institutions in other countries, with INBio, of course, as both the role model and external advisor and consultant (Juma, 1993, pp. 217-218; Chapela, 1996).

a) *The Merck-INBio Agreement*

The singular event that put INBio on the map globally was its contract with Merck, some of the details of which are proprietary and therefore not available. What is in the public domain, however, is that in September 1991 Merck and INBio signed an agreement whereby Merck would pay INBio US\$ 1 million in advance for the "identification, collection and extraction of a limited number of plants and insects, and collection of material from which Merck

cultures microorganisms" (Caporale and Dermody, 1996, p. 16). This limited quantity of samples, the exact number of which is unknown but estimated at about 2000, would be collected from Costa Rica's conservation areas over a two-year period (Aylward, Echeverría, Fendt and Barbier, 1993, p. 49). In exchange for exclusive access to those samples for two years for screening in the fields of health and agriculture, INBio was also given over US\$ 180,000 worth of equipment both for the chemistry laboratories at the University of Costa Rica that would collaborate in this endeavour and for the development of INBio's own extraction capacity. Moreover, Merck agreed to provide training for four chemists either at its own laboratories or at other research centres and it sent "two key scientists to Costa Rica to set up and train Costa Rican scientists to run the laboratory..." (Sittenfeld, 1993). Merck also agreed "to advise INBio of confirmed and reproducible activity that has been identified in an INBio sample".⁷

Merck would own the patents to any inventions resulting from this collaboration, but would pay INBio royalties "on any human or animal pharmaceutical product or agricultural chemical compound which is isolated initially from or produced by a sample provided to Merck by INBio. The royalty obligation also applies to any products which are derivatives or analogs of such compounds".⁸ The amount of royalties that INBio would receive if a product were developed on the basis of its collaboration with Merck is secret, but current industry practices suggest that it would be around 3% of the net profits.

On the basis of an estimated 2000 samples provided over two years, Bruce Aylward and colleagues estimated that the expected present value of those royalties would be around US\$ 350,000 if a drug were developed, although it could rise to as much as US\$ 1.5 million if the drug were one of the top ten in the market. They point out that this is not a significant amount when compared with the gains from training, technology transfer, and fees for samples (Aylward, Echeverría, Fendt and Barbier, 1993, p. 49). A more recent estimate as to what INBio might earn in royalties at a rate of 3% if a drug were de-

⁵ Interview with Dr. Ana Sittenfeld, Costa Rica, 24 August 1993.

⁶ Ana Sittenfeld, information on INBio for the "Bioprospecting Models" table prepared by Julie M. Feinsilver and Ignacio H. Chapela for Feinsilver, 1996; personal communication, 24 October 1994.

⁷ "Summary of Terms of Collaboration Agreement between INBio and Merck & Co., Inc.", leaflet provided by Pedro León, representative of INBio at the International Academy of the Environment's Cuernavaca [Mexico] Round Table, 6-8 April 1994, p. 2.

⁸ *Ibid*, p. 3.

veloped can be inferred from a statement by Michael Dreyfuss of the Sandoz company, in which he indicated that Sandoz (and one can assume most other transnational pharmaceutical companies) would not touch a compound, no matter how effective it were, if it were worth less than US\$ 100 million in sales annually: it would just not be worth their while to develop for less.⁹ If this were to hold true for Merck as well, then INBio would have even less chance of earning royalties.

In sum, the Merck-INBio accord provides INBio with an advance payment for samples, as well as technology transfer, human capital development, and potential royalties. In return, Merck receives exclusive access to certain samples from INBio, but only for the very specific purposes outlined in the contract and for its duration. This, however, does not mean that another institution, private company, or individual could not sell the same type of samples to another company, nor does it prohibit INBio itself from selling the Merck samples to another company as long as that company is not engaged in research on human or animal health or agriculture.¹⁰ There is an exception, however: Merck may extend the period for exclusive evaluation of up to one percent of the total number of samples provided "so long as Merck acts diligently in the evaluation and commercialization of the sample".¹¹ This suggests that the expectation of finding a novel compound is one percent or less. In fact, senior Merck scientist Dr. George Albers-Schonberg said in 1991 that "in the last 25 years, Merck Sharp and Dohme has found only five compounds from natural sources that either directly or with some chemical modification have become marketable drugs" (Schweitzer and others, 1991, p. 1295).

The quantity of samples INBio supplies is relatively small, particularly if one considers that the pharmaceutical industry's high-throughput screening equipment requires at least 5000 samples a week to run efficiently: more than double what INBio would provide over a two-year period. This also suggests that INBio's potential contribution to Merck's drug discovery program is relatively insignificant, though

its cost to Merck is also relatively insignificant: only US\$ 500,000 per year out of a research budget of US\$ 1.2 billion per year. Conversely, INBio's income from the Merck contract is not inconsequential, but it is dwarfed by INBio's other sources of endowment and funding, such as large foundation grants and, more importantly, "its access to US\$ 4.6 million from reconverted external debt (debt-for-nature swaps)".¹²

What is unique about this arrangement are the advance payments and the fact that INBio has an agreement with the Ministry of Natural Resources, Energy, and Mines to pay 10% of the advance payment (US\$ 100,000) and 50% of any royalties generated to the Ministry for support of the conservation areas. Because INBio makes its collections from those areas, it would be very shortsighted from a business perspective if it did not invest in their preservation and maintenance. Very important, but not unique to the contract, is the technology transfer and training of Costa Rican scientists.

What is the value of the INBio contract to Merck? Some argue that it has a purely public relations value. As a result of this contract, Merck has gained considerable publicity and commendation as an environmentally responsible company (Chapela, 1996). Merck renewed its contract with INBio for another two years in July 1994; although the main focus has shifted away from plants to insects, plants and microorganisms are still included. As of January 1996, no leads expected to be developed into drug candidates had resulted from this collaboration. The only scientific publications resulting from the first contract were two articles on microfungi on Costa Rican leaf litter, rather than anything on the main focus of the agreement: plants and insects (*ibid.*). An interesting point is that Merck, rather than INBio, cultures the microorganisms, so that INBio only supplies the raw material for what could be one of the most promising contributions of biodiversity to the drug discovery process.

Although very positive about the INBio-Merck collaboration, Caporale and Dermody (from Merck) point out that combinatorial chemistry can rapidly generate molecular diversity on an enormous scale through the "rapid synthesis and screening of thousands or even millions of compounds" (Caporale and Dermody, 1996). Pharmaceutical companies have

⁹ Interview with Ignacio H. Chapela, Washington, D. C., 9 January 1995, citing oral presentation by Michael Dreyfuss of Sandoz Pharma, Ltd. at the Oaxaca Mycological Facility (Mexico), 16 December 1994.

¹⁰ *Ibid.*

¹¹ Summary of Terms of INBio/Merck Agreement, p. 2.

¹² Data from INBio, 1992, cited in Chapela, 1996.

enormous chemical libraries from which they screen molecules for new leads. The screens, however, change quickly as scientific and technological advances occur (Chapela, 1996). Biodiversity, however, is still useful to the pharmaceutical industry in combination with combinatorial chemistry. For example, natural product leads, by suggesting new molecular structures that interact with the target, may provide a starting framework for subsequent optimization by combinatorial chemistry. In addition, combinatorial chemistry requires novel fragments to include in the synthetic mix, some of which may be difficult and/or time-consuming to prepare in the laboratory. Novel enzymes, derived from microorganisms, may provide one rapid route to these fragments, and this is another potential use of biodiversity (Caporale and Dermody, 1996).

As a sober reminder, the U.S. National Cancer Institute's general rule of thumb regarding natural products samples is that out of 10,000 samples tested, one activity may proceed to the next level of sophistication (preclinical pharmacology). Of every ten that get to preclinical pharmacology, one becomes an investigational new drug (IND). Of every ten investigational new drugs, only one or two get to the market. As a result, the odds of getting a drug to market from any given sample are 1 to 250,000.¹³ These odds could be decreased if one screens for more than one assay type. For example, if one screens the same sample against five different types of cell lines, enzymes or animal models with a different biochemical mechanism for each type of screen, then the odds are reduced "not linearly, but probably to below 1 in 80,000 or so".¹⁴ Clearly, this is not very encouraging, but insofar as INBio is concerned, its *raison d'être* is not bioprospecting but the preparation of inventories and the conservation of biodiversity. Bioprospecting is, however, the means to achieve that end, and it has also gained considerable publicity for INBio.

b) INBio's prospects

INBio has reasonably good prospects of getting more contracts with both Merck and other companies in pharmaceuticals, agricultural chemicals and biodiversity information management systems, for a variety of reasons. First, INBio has a proven track

record as a good and reliable partner. Second, INBio has a well-developed international public relations programme aimed at improving its financial position. This has resulted in the full support of its government, much of the international environmental community, and major donors.

The three areas of greatest potential commercial success for INBio, however, are not in bioprospecting but in the following three fields. The first of these is the promotion of INBio-type institutions elsewhere, with all of the related consulting and information management services that go with this; the second is the development of computerized biodiversity information systems with the U.S. company Intergraph, and the third is the development of a natural nematocide discovered by the British company BTG for use by the banana industry. The first potential success story, INBio itself as a product, is already having an impact as other countries, institutions, non-governmental organizations and international agencies seek advice and assistance, and as more consulting services are offered by INBio. Thus, INBio will have considerable influence over developments in the fields of biodiversity inventory, conservation, information management and dissemination, and biodiversity prospecting. This, in turn, will undoubtedly lead to greater funding for INBio.

The collaboration with Intergraph should produce marketable products in the near future, particularly as countries begin to prepare the type of inventories foreseen by the Convention on Biological Diversity. Finally, the nematocide project is extremely challenging in that the active compound is found in an endangered plant. If INBio succeeds in isolating the active compound (with the same efficacy) in leaves rather than seeds and can domesticate the plant, the economic returns should be substantial because the nematocide is non-toxic to humans and biodegradable. This should be a boon to the heavily polluting banana industry.

With regard to biodiversity prospecting, it is difficult to understand the scientific or economic rationale for the second Merck-INBio contract without access to the details of the agreement. The new contract focuses primarily, but not exclusively, on insects rather than plant samples. Lynn Caporale, of Merck, said that it was an opportunity for both parties to collaborate in an area of new scientific interest where little is known.¹⁵ Merck's interest does

¹³ Interview with Dr. David Newman, U.S. National Cancer Institute (NCI), Natural Products Branch, Frederick, MD, 1 November 1994.

¹⁴ Personal communication from Dr. Gordon Cragg, Chief, NCI Natural Products Branch, 20 January 1995.

¹⁵ Telephone interview with Lynn Caporale, 23 September 1994.

not appear to be easily justifiable on scientific grounds, because it is quite difficult to isolate a given activity in insects as it could be caused by any number of things unrelated to the insect's chemistry, such as changing geographic locations, food consumption patterns, etc. Caporale, however, believes that insects are "a unique resource".¹⁶

It may be asked: if the INBio-Merck deal is so good for the pharmaceutical industry, why aren't all of the major pharmaceutical companies jumping on the bandwagon and establishing similar relationships with host country institutions? A possible explanation is that most drug companies would rather keep their options open so as to be able to get samples (if they want them) from numerous geographical locations and various institutions and collecting agencies. Moreover, most would prefer not to pay money in advance for a long-term contract when they can merely pay for samples as they get them. Pharmaceutical and biotechnology companies may find that justifiably stricter rules for access to developing countries' biodiversity make their own countries more attractive as sources of samples. Pfizer, for example, recently made a deal with the New York Botanical Garden to provide samples from the U.S., where collection is easier.

Although INBio is not a model to be replicated exactly (Feinsilver and Chapela, 1996), much can be learned from it. Some important questions to ask are: What products has it generated? What products are in the pipeline? What is INBio's potential market share for any products it might develop? Is INBio economically sustainable, or can it only survive with grants and pro-bono technical assistance? Has it actually contributed to sustainable development, and if so, how? Who are the stakeholders and who benefits from INBio? What are the mechanisms for accountability to the Costa Rican Government? Can INBio's work provide any economic benefits for the non-scientific community? Is there any incompatibility between INBio's science-driven policies and its market-driven biodiversity prospecting, and if so, how can this be resolved?

2. The U.S. National Cancer Institute (NCI)

The National Cancer Institute's Natural Products Branch has a long history of screening natural products in search of new drugs to combat cancer and

now AIDS as well. As an agency of the Federal Government, the NCI must seek pharmaceutical companies to license and produce any drugs it discovers. In its first phase, from 1960 to 1982, the NCI screened 114,000 plant extracts derived from 35,000 plant samples, mostly from temperate zones. In its second phase, beginning in 1986, the NCI has shifted its focus to plants from tropical and subtropical areas (Cragg and others, 1994a, p. 178).

Since 1986, the NCI has contracted with three U.S. institutions to collect plant samples in tropical and subtropical Africa and Madagascar, Central and South America, and Southeast Asia, and with one institution to collect marine samples.¹⁷ In all cases, the contractors are U.S. institutions that have collaborative agreements with host-country institutions. The NCI is not working directly with any of the host country institutions on these contracts, but has other collaborative agreements with ten developing country institutions, primarily for research on those countries' medicinal plants.¹⁸ When the current round of five-year collection contracts ends in August 1996, Dr. Cragg has predicted that the NCI will then eliminate the intermediaries and purchase samples (and extracts, where the capability exists) directly from source country institutions.¹⁹

The most notable success of the NCI's screening programme is, of course, Taxol, a major breakthrough in the treatment of ovarian cancer and advanced breast cancer. Taxol was originally derived from the bark of the Pacific Yew, but it is now produced semisynthetically (sustainably) from the needles and twigs of a Himalayan Yew (*The New York Times*, 1994). Three other plant-derived anti-cancer compounds are currently in the clinical trial phase. In the first phase of the NCI's screening programme, eight plant-derived anti-cancer agents made it to clinical trials, but these were terminated either because of unacceptable toxicity levels or lack of efficacy (Cragg and others, 1993a, p. 85). Although these agents might be worth retesting under new, more sen-

¹⁶ *Ibid.*

¹⁷ Missouri Botanical Garden, New York Botanical Garden, and the University of Illinois at Chicago, which has collaboration agreements with the Arnold Arboretum at Harvard University, and the Bishop Museum at Honolulu, Hawaii.

¹⁸ "Natural Products Acquisition Program" of the Developmental Therapeutics Program, Division of Cancer Treatment, National Cancer Institute (computer printout, N.D.).

¹⁹ Interview with Dr. Gordon Cragg, 28 December 1994.

sitive protocols, Dr. Cragg has said that it is unlikely that the NCI will do so, because it is very difficult to get clinicians to revisit these agents when they had previously demonstrated very high toxicity levels and because there are so many new prospects in the pipeline.²⁰ Beyond the NCI's own direct work, there are four plant-derived anti-cancer drugs in use today that, although not discovered through the NCI screening programme, were developed with considerable assistance from the NCI (*Ibid.*, p. 81).

The NCI's policy as regards the collection of samples is to obtain both medicinal plants and broader-based taxonomic collections (Cragg and others, 1994a, p. 188). Interestingly, none of the three plant-derived anticancer drugs discovered at the NCI was collected through ethnobotanical leads. With regard to anti-HIV activity, "As of August 1993, 21,881 extracts derived from over 10,500 samples [from 2320 medicinal plants] had been tested ..."; 18% of both the total number of samples and of those from medicinal plants showed activity. Upon further examination, it was found that 90% of this activity was due to ubiquitous polysaccharides or tannins, neither of which is under consideration for drug development, thereby resulting in the elimination of those samples from further tests (Cragg and others, 1994a, p. 178).

On a more positive note, license agreements have either been negotiated or are in the process of negotiation with Cameroon, New Zealand and Sarawak (Malaysia) for the further development of potential anti-HIV drugs from active principles found in plant and marine samples. MediChem has licensed Calanolide A and is working with Sarawak. Michelamine B has not yet been licensed, but the NCI is still working with Cameroon on it. The Government of New Zealand, as well as various New Zealand academic groups, are still collaborating with the NCI on the marine-derived Halichondrin B.²¹

What do the source countries get from their relationship with the NCI? First, they get payment for their samples from the collection contractor with whom the NCI has an agreement. Second, they receive the test results for their specimens, through the collection contractor. Third, the source country's national herbarium receives voucher specimens for samples collected. Fourth, selected source country

scientists are invited to the NCI for training in isolation and screening techniques, at the NCI's expense. Fifth, cell lines and screening methodology for cancer and HIV are available for transfer to the source country if requested. Sixth, if a large quantity of raw materials is required for further testing, the source country would be the first country of choice for the supply thereof. Seventh, should a drug be developed, the source country would get a share of the royalties. The NCI's Letter of Collection stipulates that the source country will be informed of any positive screening results and will be compensated through profit-sharing by a drug company licensee of the Federal Government's patent, should a usable drug result (Cragg and others, 1994b, pp. 13-14). See figure 1 for source country benefits from the various types of collaboration mentioned here.

Finally, the NCI is considering the transfer of some extraction and initial screening to qualified source country institutions at some time in the future, probably after August 1996, when the current collection contracts end and thus free up resources for other types of arrangements.²² This policy change probably results from recent source country demands, particularly those relating to efforts to increase their control over their biological resources (since the Rio Summit in 1992) and to develop their own scientific capacity. Some countries have banned collection by intermediaries and instead are developing collection and extraction capabilities and working towards having their own screening capacity.

Dr. Cragg foresees drug discovery being done in the source countries, with the NCI subsequently assisting them in drug development (from advanced animal toxicity studies on through human clinical trials), should a likely candidate be found. The Natural Products Branch of the NCI is committed to capacity-building in source countries and will thus help them to establish extraction, isolation and screening capabilities and will work with them to develop into drugs the active compounds they may discover.²³ On the other hand, no country—even if it so desired—could develop the scale of facilities that the NCI has, nor indeed would it make sense to do so. Clearly, what does make sense is some form of collaboration that would maximize both economic and scientific benefits for the source country.

²⁰ *Ibid.*

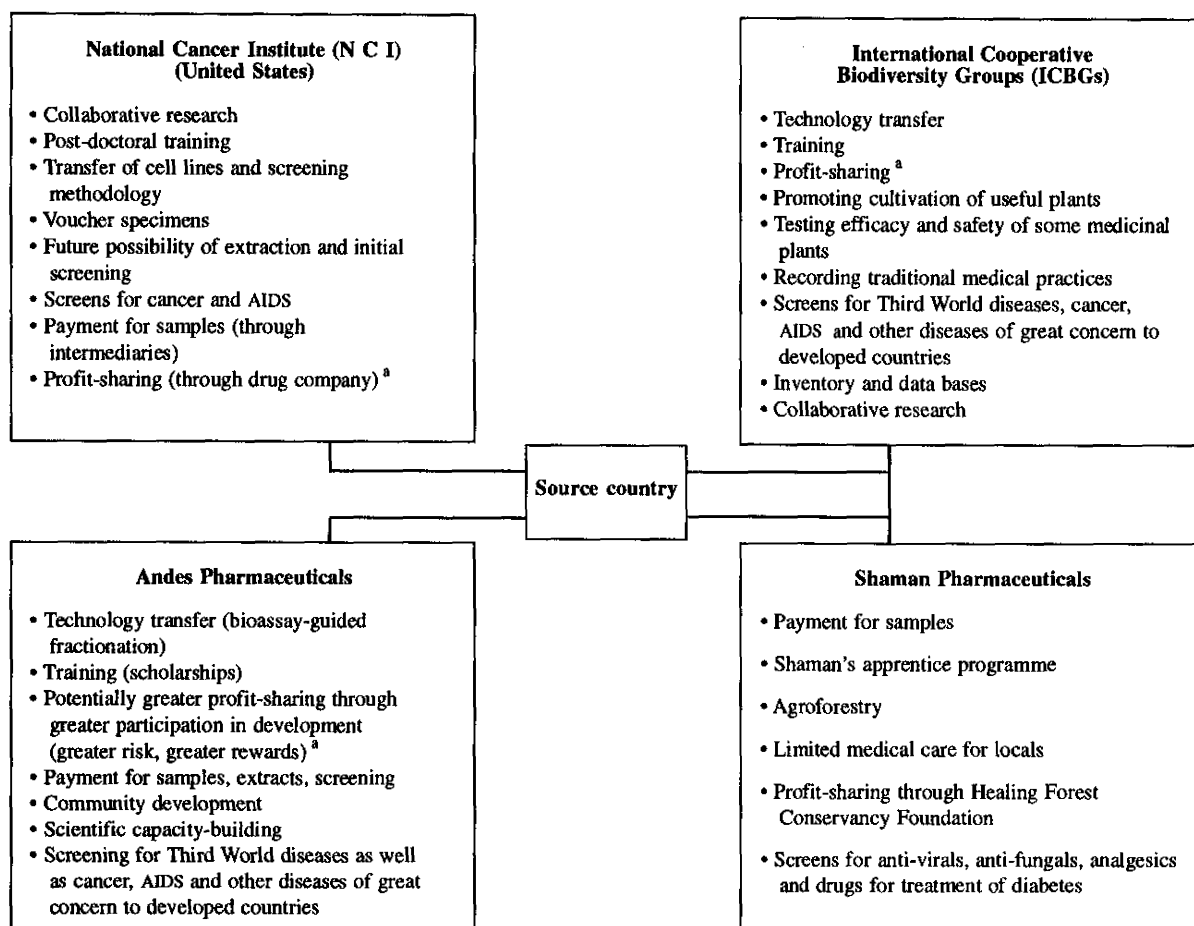
²¹ Interview with Dr. David Newman, 29 January 1995.

²² Interview with Dr. Gordon Cragg, 28 December 1994.

²³ *Ibid.*

FIGURE 1

Source country benefits from collaborations



Source: Prepared by Julie M. Feinsilver for *Biodiversity, Biotechnology and Sustainable Development in Health and Agriculture: Emerging Connections*, edited by Julie M. Feinsilver (Washington, D. C., Pan-American Health Organization, 1996).

^a Profit-sharing if –and only if– a drug is developed.

a) *The NCI's prospects*

With its extraordinarily large collection of natural products extracts, large number of cancer and HIV cell lines, and long experience in natural product screening, the NCI has good prospects of discovering or facilitating the discovery and development of anti-cancer and anti-HIV drugs. This may be done in conjunction with pharmaceutical companies or source countries. It matters little to NCI how a drug is discovered: they are willing to work with anyone on the advanced stages of testing.²⁴

On the other hand, the NCI receives only about 2000 samples per year from each of its three contractors: a small number by industry standards. With some exceptions, success has been elusive, although there are some promising candidates in the pipeline. Whether or not they get to the market remains to be seen.

Funding for the Natural Products Branch of the NCI may decrease in the near future because the interests of its new director lie in combinatorial chemistry rather than natural products drug discovery. Moreover, in a tight budget environment, if no new drugs are developed from this programme by the turn of the century, continued funding at current levels may well be in jeopardy.

²⁴ Interview with Dr. Gordon Cragg, 29 December 1994.

3. International Cooperative Biodiversity Groups (ICBGs)

The International Cooperative Biodiversity Groups are five U.S. government-funded research and development consortia engaged in "an integrated conservation and development program which addresses the interdependent issues of biodiversity conservation, sustained economic growth, and human health in terms of drug discovery for diseases of concern to both developing and developed countries" (Grifo, 1996). The five consortia funded by the National Institutes of Health, National Science Foundation and Agency for International Development (USAID) are composed of U.S. universities, U.S. drug companies, source country research institutions, local communities, and NGOs. Three consortia operate in single countries (Costa Rica, Peru and Suriname), while two work in multiple countries (Argentina, Chile and Mexico, and Cameroon and Nigeria). These consortia have each been awarded competitive grants of US\$ 400,000 to US\$ 475,000 annually for a five-year period beginning in 1994 to promote sustainable development and conservation through the search for new drugs from natural products. Moreover, the ICBGs will also document traditional medicine practices, provide training and transfer technology, prepare project-specific biodiversity inventories, develop methods for sustainable harvesting of economically promising potential drug sources, and provide funding for conservation (Grifo, 1996; USAID/NIH/NSF, 1993, pp. 1-2).

The development of this interagency effort began in 1991, but due to the recency of the awards, there is little public data on the ICBGs' progress. A preliminary report indicates that of the 2000 species of plants and insects screened, 120 had biological activity, but it is not yet clear how many of these are already known entities, so dereplication studies are being carried out. Twenty-five leads are being studied chemically for use against cancer, central nervous system disorders, malaria and viral diseases. Training has been provided to some 75 students and technicians from both the U.S. and the developing countries, and "significant infrastructural development [has taken place] in source-country institutions of at least 6 countries".²⁵

The source countries benefit considerably from this type of collaborative arrangement because they

gain technology transfer, various types of relevant training, sustainable development assistance, capacity building, conservation information systems, the preservation of indigenous knowledge, and last but not least, equitable compensation should a drug be developed from source country samples. More important, however, is source country collaboration from the outset of these projects as a full partner in both the design and execution of the projects. These benefits, unfortunately, are only available to a very few countries, due to funding limitations.

a) *The ICBGs' prospects*

Prospects for future funding of the ICBGs are not very bright unless there is a major drug discovery in the next four years: an event that is not very likely, because testing, product development and U.S. Food and Drug Administration (FDA) approval often take decades despite good intentions and efforts. With the Republicans in control of Congress and the goal of balancing the federal budget in seven years, the reality is that budget priorities are likely to be redirected elsewhere. Already there has been a decrease in funding in fiscal year 1996, compared with the previous year, as the U.S. Agency for International Development (USAID) reduced its contribution to the ICBGs from US\$ 500,000 to US\$ 150,000, and it will not fund the ICBGs at all in fiscal years 1997 and 1998.²⁶ Moreover, the director of the National Institutes of Health (NIH) is planning a reevaluation of all international programmes, and this could lead to decreased funding.

The lessons learned in establishing these north-south collaborative research consortia and the technology transfer and training included therein will be of great value, but they are unlikely to be replicable without major external funding. It is also highly unlikely that the pharmaceutical industry will put sufficient money into this project to keep it afloat, because according to some critics the ICBGs are a federal subsidy for U.S. pharmaceutical companies' drug discovery process. An indication that this is indeed a kind of subsidy is that, as of January 1996, the pharmaceutical company partners in the five consortia provided only a little over "US\$ 300,000 in domestic screening investment, and over US\$ 150,000 in advance payments, infrastructure and capacity-

²⁵ Joshua Rosenthal, personal communication of 31 January 1996, based on Rosenthal (forthcoming).

²⁶ *Ibid.*

building efforts in host countries".²⁷ This amounts to about US\$ 45,000 per year per consortium: a paltry amount compared with the upwards of one billion dollars per year that major pharmaceutical companies spend on research and development. Thus, with little likelihood of the private sector funding these projects and with Congress and government agencies looking for ways to further cut the budget, it seems, unfortunately, that the future of the ICBGs may not be bright.

4. Shaman Pharmaceuticals, Inc.

Shaman Pharmaceuticals is a small, relatively young natural products pharmaceutical company (with no products on the market yet) that uses ethnobotanical collection methods in its search for active compounds. If a plant is used in a similar way in three or more different cultures it is sent to Shaman's California laboratories for isolation of the active principle and screening "against disease assays including viruses, fungi, analgesia or diabetes" (Zisson, 1993, p. 2). Shaman claims a hit rate of 50 percent, but they are known to define a hit very loosely and this claim is not borne out by any hard data. They were, however, able to bring two compounds to clinical trials after only two years of operations, but though this is impressive it does not necessarily mean that they will have two marketable products.

Shaman's lead compound is Provir (SP303), an anti-viral derived from Sangre de Drago (Dragon's Blood), the red latex of the ubiquitous *Croton lechleri* that is widely used in South America for gastrointestinal and respiratory diseases as well as a cure-all. Provir was in Phase II clinical trials for use against respiratory syncytial virus (RSV), but it was insufficiently active. It will go back to Phase II trials, but as a potential anti-diarrheal (*BioVenture View*, 1995b). Virend is a topical version of SP303 for use against oral and genital herpes simplex virus. The market is well covered by Zovirax, so Shaman is seeking entry into the market as a drug for strains resistant to it (Zisson, 1993, p. 6). Successful Phase II trials on AIDS patients have led Shaman to design Phase III trials for fast-track Food and Drug Administration (FDA) over-the-counter (OTC) approval. Shaman is seeking European and Japanese partners to develop and market Virend abroad (*Pharmaceutical Business News*, 1995). News of the successful clinical trials

boosted Shaman's stock by 14% to US\$ 7 (*The Wall Street Journal*, 1995, B11, p. 6).

Shaman's other lead compound, SP1100, is a family of anti-fungals which is claimed to have "a totally novel mechanism of action, apparently unrelated to the azoles and polyenes that comprise standard therapy today". Phase I trials were expected to begin in 1995, based on analogs developed after the original formulation was found to have "very low bioavailability and some systemic toxicity" (Zisson, 1993, pp. 8 and 9), but in mid-November 1994 the company announced that it would not file an IND (investigational new drug) for it "because it requires a large medicinal chemistry effort, which isn't the company's strength" (The Bernstein Report on BioBusiness, 1994, p. B1). Shaman will, instead, seek to license the compound for further development and will seek partners to take both Provir and Virend to Phase III clinical trials (*Ibid.*).

In the mid-November 1994 company restructuring, Shaman's focus appears to have changed from ethnobotanical collection to *in vivo* whole animal model testing. This reverses the accepted industry practice of doing *in vitro* tests first and then *in vivo* animal models, although Shaman argues that this saves time and, by implication, money. They will now concentrate on "areas where it's advantageous to use whole animal screens. SHMN [NASDAQ code for Shaman] is shrinking its anti-infectives program, eliminating antifungal screening and cutting back on antiviral screening" (*Ibid.*). Shaman's plan is to work on diseases of greater importance to the pharmaceutical industry from which it desires funding: diabetes, "central nervous system disorders, inflammatory diseases, and symptoms such as gastrointestinal and respiratory problems associated with infections" (*Ibid.*).

Unlike the previous bioprospecting models, Shaman is a profit-seeking company and thus has been funded by venture capital, licensing revenues, stock traded on the NASDAQ, and corporate partners. Its bottom line is, therefore, to make a profit, but it is claimed to be much more sensitive than others in its dealings with local communities and indigenous peoples (Chapela, 1996). Shaman Pharmaceuticals sends U.S. collectors to get information from traditional healers in the developing world in exchange for both the promise of future compensation should a drug be developed, and the delivery of some medical care for the collaborating communities as well as the provision of various types of goods and/or services that

²⁷ *Ibid.*

the communities tell the U.S. ethnobotanists they need. For example, at a recent meeting Shaman Vice-President Steven King mentioned providing PVC tubing to a community that had asked for it. He was roundly criticized for exchanging tubing for indigenous knowledge,²⁸ but it was explained that the PVC was intended as a confidence-building measure to improve rapport with the community and did not represent the total compensation that would be paid, should a product be developed.

In a recent Shaman patent application, no indigenous community was mentioned in the patent, although the information for the development of the product was ethnobotanical (*Ibid.*). In response to criticism of this patent application, King said that their application stated that the plant was widely known and used throughout South America. Moreover, he claimed that they were unable to pinpoint its origin to a specific community.²⁹ One of the functions of the Healing Forest Conservancy, a foundation established by Shaman Pharmaceuticals, is to provide mechanisms for benefit-sharing among the communities involved in their drug discovery process. Because there have not been any profits to share, questions as to which communities would be included have not been addressed. All communities that possess the same knowledge but were not asked for it by Shaman may contest the "rights" of those selected by Shaman to provide information, and thus benefit. Because U.S. patent law does not allow for the inclusion of indigenous peoples or communities in patents, these communities have no protection under law unless they have a separate side agreement (contract) with Shaman for a portion of future profits.

As a profit-seeking enterprise, Shaman does not provide training for source country scientists nor does it assist in scientific capacity-building nor technology transfer. Its collection model is more culturally sensitive than that of other for-profit collectors, but its very existence and success depend upon developing good rapport with indigenous healers so as to extract ethnobotanical information from them in order to develop drugs. It is therefore not surprising that Shaman launched the Shaman's

Apprentice programme (a concept also adopted by some of the ICBGs following Shaman's lead) and the Healing Forest Conservancy to preserve and promote traditional medicine.

One of the criticisms of Shaman Pharmaceuticals is that its ability to raise funds has been tied less to any potential product development than "to the extraordinary media coverage of the loss of biodiversity and the institutions that are perceived as countering this loss" (*Ibid.*). As of September 1993, Shaman had a deficit of US\$ 22.2 million, with an operating loss of US\$ 13.3 million up to May 1993.³⁰ Shaman took a US\$ 500,000 charge against earnings in the fourth quarter of 1994 to meet restructuring expenses (The Bernstein Report on BioBusiness, 1994, p. B1). This, however, is not uncommon in the biotechnology industry, with which Shaman seems to have more in common than the pharmaceutical industry.³¹

Shaman's restructuring is designed to save operating costs, make the company stand out in the crowd of biotech drug discovery companies seeking strategic alliances with pharmaceutical giants, and make the company viable in general. A company source said that they remain a natural products company and will continue their ethnobotanical approach to collection and maintain The Healing Forest Conservancy.³²

a) Shaman's prospects

Shaman's prospects depend greatly on i) whether their lead compounds pass muster, and ii) whether they can continue to raise enough capital and make strategic alliances to keep on testing and developing their compounds. Eli Lilly's recent decision not to renew its contract with Shaman suggests a loss of confidence in the company and/or in their ethnobotanical approach to drug discovery (*The Wall Street Journal*, 1994, B7, p. 1). On the other hand, Shaman has recently negotiated a new partnership arrangement with Ono Pharmaceuticals of Japan whereby Ono provides research capital and Shaman provides new clinical entities in a project to develop an oral

²⁸ Comments made at the PAHO/IICA Biodiversity Symposium Follow-up Meeting, Washington, D. C., 22 October 1994.

²⁹ Interview with Dr. Steven King, Ph.D., Vice-President for Ethnobotany and Conservation, Shaman Pharmaceuticals, Inc., at Cuernavaca, Mexico, 8 April 1994.

³⁰ Chapela (1996) cites a 1994 "Financial Fact Sheet" of Shaman Pharmaceuticals, Inc.

³¹ For Shaman's similarities with the biotech industry, see Chapela (1996), and on biotech industry losses see Burrill and Lee, Jr., 1993, p. VII.

³² Personal communication from Martha, assistant to Steven King, 3 January 1995.

hypoglycemic agent to treat diabetes. If the project is successful, Ono will have exclusive manufacturing and marketing rights for Japan, South Korea and Taiwan (*Biotechnology Newswatch*, 1995). In a move away from ethnobotany, Shaman has licensed some patents and preclinical data from Bayer in an effort to develop antifungal agents. Shaman will pay Bayer royalties if a successful product is developed (*BioVenture View*, 1995a).

Sales for Aciclovir, the only FDA-approved genital herpes treatment, were greater than US\$ 1.4 billion in 1994 (*AIDS Weekly*, 1995). Thus, if Virend successfully passes Phase III trials and the costs of production make the medicine commercially viable, then Shaman should be able to recuperate its operating losses, attract new strategic alliances and investment, and become profitable.

5. Andes Pharmaceuticals, Inc.

Andes Pharmaceuticals is a natural products drug discovery company dedicated to responsible biodiversity prospecting by setting up source country joint ventures to which it "transfers proprietary natural products drug discovery technology, expertise, and support in order to perform drug discovery activities within the source countries".³³ Under this arrangement, source countries are able to add greater value to their biodiversity, have greater control over its use and over product development, and develop their own scientific capacity. Andes establishes strategic alliances with source country universities, institutions, NGOs and the private sector.

In Colombia, for example, Andes has collaborative agreements with two universities and two NGOs, and has recently formed its first joint venture, Bio-Andes de Colombia, S.A., with a Colombian partner. Rather than merely using the host country population as a source of cheap labour, these in-country partners, including universities and NGOs, will have an equity stake in the joint venture. The assumption of greater risk leads to greater technology transfer and a greater share of any profits realized from the marketing of a drug, should one be discovered and developed.³⁴ Al-

though drug discovery activities will take place in BioAndes' own laboratories, the company will utilize and help expand existing scientific capacity through collaboration with the source countries' universities and institutes.³⁵ The first bioassay results from the BioAndes pilot project are expected in late 1996.

The stated goals of Andes Pharmaceuticals are technology transfer to developing countries; conservation through sustainable economic activity; capacity-building in developing countries; equitable compensation of local/indigenous communities, and the creation of opportunities for source country entities/collaborators to share in profits.³⁶ Specific activities to be conducted by Andes Pharmaceuticals include ethnobotanically-guided and taxonomically-guided plant collections as well as random collection of plants, soil microbes, and fungi, with voucher samples deposited in source country and international herbaria; bioassay-guided fractionation and screening in joint venture research laboratories located in the source country; technology transfer (equipment, know-how, etc.) to appropriate source country collaborators (i.e., universities, institutions, etc.); capacity-building through appropriate source country partners/collaborators; technical training of local indigenous people as guides and parataxonomists and technical training of local scientists and students (both graduate and undergraduate) in areas related to bioprospecting; and information dissemination within the source country to promote traditional medicine and the publication of scientific papers for the international scientific community.³⁷

Other companies, such as Shaman Pharmaceuticals, send samples back to the U.S. to be screened, but Andes Pharmaceuticals differentiates itself from them by having source country nationals do that work in their own country. This not only creates significant opportunities for transferring biotechnology to developing countries and furthering their scientific capacity, but also permits the source countries to add greater value to their biodiversity. Moreover, some bioassays will even be conducted in the field with simplified bioassay field kits that Andes is developing specifically for this purpose. These bioassays

³³ Interview with Edgar Asebey, President of Andes Pharmaceuticals, Washington, D.C., 1 February 1996.

³⁴ Asebey, 1996, and interview with Edgar Asebey, 30 December 1994.

³⁵ Interview with Edgar Asebey, Washington, D. C., 6 January 1995.

³⁶ Edgar Asebey, information on bioprospecting models, for inclusion in Feinsilver, ed., 1996.

³⁷ *Ibid.*

will use fresh rather than dried samples, which should lead to increased activity (Asebey, 1996). The greater the value added locally, the greater the proportion of benefits returned to the source country. Thus, Andes' approach may create an economic rationale for the conservation of biodiversity.

a) *Prospects for Andes Pharmaceuticals*

Andes' prospects for gaining substantial financing as well as access to source country resources in the immediate term look good because they have gained support from investors and scientific institutions in Latin America, Europe and the United States. Because Andes is committed to technology transfer and conservation in the source country, it has also gained the support of major international environmental organizations based both in Latin America and the United States. This will further legitimize Andes' activities and make fund raising easier.

With regard to drug discovery, Andes may have a good chance of succeeding in this respect too, because its screens are developed specifically for natu-

ral products, making them more efficient than those used more generally. Andes has an impressive group of scientists on its advisory board, some of whom worked with the United States NCI previously. In fact, the scientist who developed the NCI's anti-cancer screens is now the chief scientific officer at Andes.³⁸ Andes' drug discovery operations are based in the source country, where it has reliable access to some of the world's richest biodiversity and the ability to systematically screen it. Finally, Andes is currently negotiating strategic alliances with several U.S.-based biotechnology companies that have accepted the principles of the Biodiversity Convention so as to guarantee access to genetic resources.

The reality facing Andes, as well as the others, is that drug discovery is a long and arduous process with extremely high risk and little likelihood of rewards. Andes, however, is also keenly searching for drugs that are important to the developing countries (particularly the source country), and may thus have greater success than companies only seeking drugs for diseases of major concern to the developed countries.

III

Policy options for other institutions and countries

When most policymakers discuss the prospects of biodiversity prospecting, they mention the INBio-Merck agreement as an example of how potentially lucrative their countries' biodiversity might be. What they fail to realize, however, is that biodiversity prospecting may not be the best, most efficient, most cost-effective way to achieve their goals. Nonetheless, biodiversity prospecting does stimulate the development of scientific capacity in a variety of areas, and this scientific and educational effort has spillover effects in other economic sectors.

Biodiversity prospecting is only beneficial to developing countries if they receive sufficient technology and training to develop their own biotechnology capacity. This is necessary given the increasing scientific and technological gap between countries. Without minimal understanding of biotechnology, it will be difficult to decide what technology a country needs and what economic development, scientific,

and environmental policies to adopt, and this will lead to yet further economic marginalization.³⁹

Biodiversity prospecting is also useful if it is combined with other efforts to produce scientifically validated and standardized herbal remedies to meet the primary health care needs in the developing world, as well as some of the European countries, where phytopharmaceuticals and herbal remedies are common. A recent editorial in *The Lancet* (18 June 1994) suggests that there is an urgent need to screen

³⁸ Interview with Dr. David Newman, 29 January 1996.

³⁹ It could be argued that Cuba, although in dire economic straits, would have been much worse off in agriculture, industry and medicine in the current circumstances, had the revolutionary government not made heavy investments in science in general and biotechnology (biomedical, agricultural and industrial) in particular. For a discussion of Cuba's biotechnology development see Feinsilver, 1993 (chapter 5 on biotechnology) and Feinsilver, 1994, pp. 167-189.

plants for potential therapeutic benefit, and "priority should be given to tropical infectious and chronic diseases, for which current medications have severe drawbacks, and to the scientific appraisal of plant-based remedies that might be safer, cheaper and less toxic items for self-medication than existing prescribable medicines" (*The Lancet*, 1994, p. 1515). The same article suggested that research into "nutriceuticals" (food plants used as preventive medicine, i.e., antioxidants) could be important (*Ibid.*), although it recognized the difficulty in finding funding for these activities.

The probability of bringing a new drug to market based on bioprospecting is only between 1 in 80,000 and 1 in 250,000. With odds this great against success, why bother? First, there are important educational benefits in focusing on an array of scientific disciplines related not only to the environment, but also to genetic engineering and computer science. These include the preparation of a scientific workforce trained to deal with both current problems and those of the 21st century. Second, there are spillover effects for other economic areas in terms of both improved and better-directed scientific education and science and technology capacity-building. As is well known, scientific achievements in one field are often directly utilized or converted for use in other fields. Biotechnology development is one area where the techniques are standardized, but the actual use made of them varies widely from human medical research to agriculture to industrial applications. This is not to suggest that someone trained in one of those areas could work in another, but rather that many of the techniques are common to all the areas.

Policies regarding bioprospecting will be most successful if integrated into a larger plan for both economic development and environmental preservation (sustainable development). Coordination of institutions that might participate in various aspects of programmes established in this field is critical to avoid duplication of efforts and inefficient, and possibly ineffective, use of resources. Support at the highest levels of government is necessary for formulating government policy and overseeing programmes linking the various actors into a web of collaborative and mutually reinforcing institutional arrangements.

To meet the obligations of the Convention on Biological Diversity, countries will need to inventory their biodiversity. This inventory would then form the basis not only of preservation efforts, but also of

sustainable development, and possibly bioprospecting endeavours. Even without an inventory, however, countries and institutions can still sell their services as collection agencies. Pharmaceutical companies do not need to know everything that is out there in order to carry out high-throughput screening, but they do need accurate identification of samples.

As a minimum, institutions and countries could develop reliable, high-quality collection and extraction capabilities. There must be sufficient guarantees that samples and extracts provided can be recollected without difficulty; supplied in larger quantities if needed; properly described, marked, and the data accurately computerized; and sent without contamination. The technology required is not terribly sophisticated, but training and considerable care are necessary. Furthermore, ethnobotanical knowledge should be surveyed, where possible, and accurately recorded. While these seem like simple steps, they are more complex than they appear.

Following the INBio model, trained biologists and taxonomists could oversee and educate parataxonomists. Frequent monitoring is important. Identification, description and data entry may take place anywhere and only require a laptop computer, a bar code encoder and scanner. Samples may be dried and packaged with minimal infrastructure. Extraction, on the other hand, requires a laboratory, a stable electricity supply, and proper storage facilities. One or more chemistry departments at area universities could establish extraction laboratories, preferably for use by a consortium of collectors either under the supervision of a university department or interdepartmental programme, an external research institution, an NGO, or in collaboration with the private sector. Subsidization of start-up costs would probably be necessary, but with prior market analysis it might be possible to find a company willing to negotiate a supply-for-equipment agreement for the initial stages of a contract.

If at all possible, countries or institutions could also establish bioassay-guided fractionation, isolation, characterization and structural elucidation capacity, and screening facilities. Countries with sufficient scientific expertise could also attempt to synthesize active compounds, because "most natural product agents, once they have been purified from their native mixtures, do not make good pharmaceuticals....They may not formulate well; they may not be bioavailable; they may not have the appropriate

stability; they may have toxic side-effects as a single agent. Often an analogue programme is designed to overcome those issues, more than to get around a particular patent".⁴⁰

The development or refinement of the above-mentioned scientific capacity is, of course, far more costly both in terms of equipment and the level of training required to perform these tasks, but even so it is not beyond the capacity of many developing countries and could be done on a regional basis in either federal or multinational R & D consortia. Countries could seek the specialized training in the development and use of screens which is given to selected foreign nationals by the U.S. National Cancer Institute's Natural Products Branch and affiliated universities. Post-graduate training in related disciplines could be given priority by State funding agencies, and universities could develop interdisciplinary programmes to prepare scientists to work at various levels in the areas of molecular biology and chemistry, and to hone skills in genetic engineering. The ultimate aim would be to develop screens relevant to local disease problems which the transnational pharmaceutical companies will very likely ignore, and to utilize existing screens, which can be acquired from the NCI, to screen extracts from local biodiversity as possible sources of drugs to combat cancer and AIDS.

Aiming for the creation of a local pharmaceutical industry may not be cost-effective, but may make sense for non-economic reasons. If a domestic pharmaceutical industry is already in existence or if domestic fine chemistry and molecular biology capacity has been established, then every effort could be made to develop or acquire screens to assay local biodiversity for potentially active compounds. The difficulty, however, is in arriving at a useful compound that is more effective than existing remedies, easily deliverable, passes toxicity requirements, is neither complicated nor costly to produce, and is not patented already by someone else (although this is not a problem in most Third World countries). In conjunction with attempts to find active compounds for allopathic medicines, a country could also focus on local health problems and the domestic primary health care ser-

vices market, with a view to developing drugs from biodiversity that are based on traditional medicine practices yet have been scientifically substantiated. These medicines should be very carefully evaluated, their dosages standardized, their quality carefully controlled, and their distribution monitored (*The Lancet*, 1994, pp. 1513-1515).

Countries without sufficient scientific infrastructure to do bioassay-guided fractionation, structural elucidation, and develop screens, could research agricultural production techniques to achieve maximum yield of specific economically important plants. Those with some agricultural biotechnology expertise could study maximization of the production of the active compound by the plant. This is not inconsequential, because "natural product drugs are often very complex molecules with many chiral centers and, as such, pose formidable challenges to their synthetic production. Thus, such important plant-derived anticancer drugs as vinblastine and vincristine are still isolated from the source plant, *Catharanthus roseus*, despite over 20 years of efforts to produce them synthetically. Likewise, microbially-derived anticancer drugs, such as the bleomycins and daunorubicin, are still produced by fermentation rather than total synthesis" (Cragg, 1993b).

In sum, initial findings indicate that biodiversity prospecting for new pharmaceuticals is not a panacea for development, but lucrative rewards might be gained in the long run if countries have or establish the relevant scientific infrastructures, intellectual property laws, conservation areas, and good negotiating skills, and if they have the political will to collaborate both with each other and with developed country industries. The market for essential oils (particularly for use in cosmetics) and for phytopharmaceuticals and herbal preparations, however, is much greater and easier to get into than that for new compounds to be tested for possible pharmaceutical use. The long testing period for pharmaceuticals makes immediate returns unlikely, though there is long-term potential. Moreover, there are important spillover effects for other economic sectors, particularly in agriculture and industry, from developing the scientific capacity to add value to the various stages of the biodiversity prospecting/drug development process, and these might make the necessary investment seem more rational in spite of the limited immediate financial returns.

(Original: English)

⁴⁰ Commentary by James McChesney during the discussion following the presentation by Cragg and others at the Ciba Foundation Symposium No. 185 (Cragg and others, 1994a, p. 194).

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Foreign investment and *competitive development* in Latin America *and the Caribbean*

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This article analyses the treatment accorded to foreign investment under the present development strategy. To this end, it looks at the recent dynamics of both direct and indirect foreign investment, including portfolio investment and quasi-equity operations, the latter with reference to contracts for the transfer of production know-how. For this purpose, the main resource flows and their directions are analysed, together with the changes which have taken place in corporate strategies. It is concluded that it is necessary to put together an explicit development strategy in which the main objective of policy on the treatment of foreign investments should be that of enriching the store of technological knowledge of the host economies. This policy should be complemented with others concerning the capacity for the absorption of technology, so as to strengthen industrial and technological learning capacity, as the foundation of a phase of endogenous innovation and dynamic expansion of international competitiveness.

I

Introduction

The central focus of the analysis presented here is the importance of foreign investment for the countries of Latin America and the Caribbean in the first half of the 1990s, against the background of the new regional and world circumstances.

Not only have there been changes in the forms of foreign investment¹ and the composition of the corresponding flows, but both new investment and the cumulative stock of investments have been conditioned by a new Latin American economic setting in which the market and private enterprise have assumed a leading role, in line with the economic liberalization and deregulation measures adopted and the desire to increase the competitiveness of the production apparatus. The aim is to achieve a bigger and better place in the world economy and keep up a growing level of economic activity in the medium and long term. This change in the strategy of the Latin American and Caribbean countries cannot be separated from the process of globalization² of the world economy, which is putting its indelible mark not only on the macrostrategic and political policy design of the Latin American countries but is also having a decisive impact on the rationale behind the microeconomic behaviour of the domestic and foreign agents operating in Latin America and the Caribbean.

¹ Various forms of foreign investment are taken into account in this article. In addition to foreign direct investment (FDI), which normally means the expansion or creation of production capacity (gross capital formation), there is the so-called indirect foreign investment: that is to say, investment which does not necessarily involve greater production capacity. Examples are foreign portfolio investment (i.e., shares, bonds or deposits) and quasi-equity foreign investment, which consists of inter-firm contracts for the transfer of production know-how (technology, technical assistance, assistance in the fields of management or marketing, etc.). Foreign direct investment gives rise to return payments of profits, portfolio investment attracts interest payments or dividends, and quasi-equity (also known as non-equity) investment generates payments of royalties, fees, commissions, etc.

² For the purposes of this article, globalization may be understood as an increasingly intensive process of "international production": a concept which covers all types of value-adding activities, organized on a transnational basis by a firm which owns or controls them (Dunning, 1993).

The analytical framework operates with reference to the matrix of possibilities defined by two complex dynamic vectors—"reality" and "strategy"—which interact with each other. On the one hand, the economic reality of Latin America at the beginning of the present decade was moulded by the prolonged application of a development strategy based on import substitution industrialization. Reshaping that reality is the current challenge in the context of the new world economy. On the other hand, that same reality calls for a strategy and policy design which gives priority to improving the international competitiveness of the Latin American economies by increasing the complexity and technological sophistication of the production apparatus and thereby raising productivity.

Import substitution industrialization gave rise to a typical form of industrial enterprise in the region and, as far as foreign direct investment was concerned, led to the establishment of "isolated" local subsidiaries which operated with scales of production and technologies consonant with the existence of heavily protected local markets, strictly regulated international transactions and, in general, economic policies with a strong anti-export bias that it was frequently sought to correct through measures that did not basically alter the rationale of the model. The policy applied generally gave rise to a passive relationship between these local subsidiaries and their suppliers of capital goods, inputs and technology, mostly on an intra-firm basis.

Foreign subsidiaries in Latin America displayed insufficient levels of linkages both with the domestic industrial and business sector, which itself had a low level of development, and with the respective institutional bodies responsible for promoting endogenous technological development, which were also underdeveloped. The smaller the economic size of the host country, the more pronounced these effects were.

There were no clearly formulated strategies and policies in the Latin American countries which deliberately sought to secure the social absorption of production know-how, with the consequent industrial and technological learning process and the sub-

sequent stage of competitive innovation. All this militated against the achievement of more dynamic and qualitatively superior international linkages by these countries. It may be noted that the most important legacy left by this period³ is the inherited industrial platform, which, in terms of accumulated foreign direct investment, is made up of companies which are concentrated in the areas of activity with the greatest technological complexity or the greatest international linkages and are therefore suitable for industrial restructuring and competitive development.

The Latin American scene in the first half of the 1990s is marked by a generalized attempt to work out a new competitive development strategy based on a renovated institutional scheme reflected in a new regulatory framework favouring the production of tradeable goods. At the same time, the regional macroeconomic situation has been marked by some slackening of the traditional external financial constraints and the beginning of a process of recovery of the coefficients of saving and investment, which were very hard hit by the crisis of the 1980s.

In order to represent the current situation correctly, however, we must place on the other side of the equation not only the constraints introduced by import substitution industrialization at the microeconomic level, but also the institutional deterioration of the limited technological and innovative capacity of the countries of the region (Vera-Vassallo, 1995a) and the distortions in the fundamental prices of the economy caused by the massive inflow of foreign capital. So far in the present decade, this system of prices does not seem to be evolving in a manner fully in keeping with the aim of securing bigger and better international linkages.

Within this context, there are two institutional variables which take on special significance in the matrix of possibilities mentioned earlier. One concerns the forms and features of the international transfer of technology. The other is the Latin American countries' social capacity to absorb technical progress. Some forms of transfer are more effective than others, but the incorporation of technology into the store of knowledge of a given economy and its enterprises depends on certain institutional and organizational conditions of the recipient country itself.

³ Although in fact Latin America's per capita GDP grew at an average rate of 2.7% per year over the period 1945-1980, which was more than the rate of 2.5% proposed by the Alliance for Progress in 1960 (Ramos, 1993).

The way the argument of the present article is developed is based on two assumptions which are of a conceptual nature but can be verified as facts. The first concerns the importance of maintaining an awareness of the systemic nature of competitive development when seeking to promote it⁴ (ECLAC, 1995a). The second recognizes the importance of the contribution that foreign investment can make both to real investment processes and to the competitive restructuring and international linkages of the recipient economies. This recognition extends also to its main vehicle—the transnational corporations—, which have undergone important changes in their international strategies and structures in line with the emergence of the new international economic order (ECLAC, 1995c).

The historical starting point for this was the return of Latin America to the international financial markets, which reopened a period in which external saving could supplement domestic saving in order to finance the investment requirements imposed with more or less urgency by the reactivation of Latin American and Caribbean development and the emergence of a new regional and world economic setting. On the one hand, it was necessary to meet the social demands in terms of income and productive employment which had been postponed during the 1980s. On the other hand, greater emphasis needed to be given to the task—already begun in the previous decade—of restructuring the domestic production apparatus to achieve higher levels of productivity and international competitiveness.

The main aim of this article is to highlight the new features of the way foreign investment is treated in the Latin American countries under their new production development strategy. The idea is to emphasize the need to link together an explicit development strategy, the maintenance of a systemic concept in

⁴ Systemic competitiveness is understood as meaning that form of competitiveness which is intimately linked not only with the internal capacities of the firms themselves but also with their whole network of trade and institutional relations, which affect the companies' effective degree of international competitiveness. In this sense, a whole range of factors are important, extending from the science and technology infrastructure and the national educational system, through the transport, communications and energy services (including the respective physical infrastructure), up to inter-industry and inter-firm relations (governed by the rules of competition), financial services, the legal system and, in general, the country's whole institutional order, both public and private.

designing the relevant actions and policies, and the crucial objective of enhancing the store of technological know-how⁵ of the host economies. In other words, there is no question of promoting the indiscriminate procurement of financial assets. The real aim is –without prejudice to the functioning of the market– to formulate an integrated regulatory framework compatible with the objective of maximizing the international transfer of production know-how, which is the most important external contribution

to Latin American development. The foregoing measures should be such as to ensure that this transfer encounters a degree of local capacity for the absorption of technology which makes it possible not only to incorporate technical progress and spread it throughout the production apparatus, but also –and above all– to strengthen national industrial and technological learning capacity as an essential prelude to the subsequent phase of endogenous innovation and rapid growth of international competitiveness.

II

Foreign investment and competitive development in Latin America and the Caribbean

1. The Inrush of foreign capital over the last five years

The first half of the 1990s has witnessed a massive inflow of various forms of foreign investment. The external financial constraints, aggravated by the international debt crisis which hit this part of the developing world particularly hard, have now disappeared. The net inflow of foreign capital⁶ over the period 1990-1994 averaged US\$ 50 billion per year,⁷ which is much more than the average net annual inflow over the period 1987-1989 of less than US\$ 21 billion. The net inflow of foreign capital into Latin America and the Caribbean almost doubled during the first four years of the present decade, exceeding US\$ 63 billion in 1994 (table 1).

⁵ This includes both "hard" technology (hardware) and "soft" know-how (software).

⁶ The net inflow consists of the inflow of short- and long-term public and private capital less remittances of capital abroad due to disinvestment or amortization payments on foreign loans. This concept is different from that of the net balance (used in the balance of payments), which is equal to the difference between net inflows and outflows in respect of an identical item (e.g., inflows of foreign direct investment less foreign direct investment by the host country abroad). It is this latter concept which is used in annual ECLAC publications such as the *Preliminary Overview* and the *Economic Survey*.

⁷ This includes the net inflows of foreign direct investment, foreign portfolio investment, official finance and foreign bank loans.

At the same time, substantial changes took place in the composition of these flows (table 2), especially in terms of the predominance of private foreign capital, which represented over 68% of total inflows in 1990, rising to 99.7% in 1994. Foreign portfolio investment, which accounted for less than 4% of the total net inflow in 1990, represented 62% of the total in 1993 (42% in 1994): the most significant change during the period in question, both because of the amounts involved and the appearance of new mechanisms and instruments for such investment. Foreign portfolio investment, mainly in the form of stocks and bonds, grew by a factor of over 20 in net terms between 1990 and 1994 (by a factor of 38 up to 1993). Foreign direct investment also increased significantly, growing by a factor of over 2.5 between 1990 and 1994, which represents a cumulative annual growth rate of over 27%. Private external finance (from new and diversified sources) reappeared, and net transfers of financial resources abroad ceased as from 1991⁸ (ECLAC, 1995d).

Net finance from official sources ceased to be significant during the period in question, while private bank loans have fluctuated around an annual average of US\$ 13.7 billion so far in this decade (table 1).

⁸ Although such transfers began again in 1995, after the Mexican financial crisis.

TABLE 1

Latin America and the Caribbean: Total net capital inflows, 1990-1994
(Millions of US dollars)

	1990	1991	1992	1993	1994
A. Foreign direct investment (FDI)	8 061	12 830	14 487	15 580	21 252
B. Foreign portfolio investment (1+2+3)	1 200	12 243	14 307	45 373	26 279
1. Bonds ^a	101	4 133	4 138	19 844	12 719
2. Stocks and shares	1 099	6 228	8 229	25 149	13 160
3. Commercial paper and certificates of deposit	-	1 880	1 940	380	400
C. Official finance ^b	10 492	6 663	2 476	4 569	182
D. Private debt	12 289	8 019	17 067	7 854	15 416
1. Bank loans	11 893	9 874	18 946	9 723	17 920
a) Long-term	2 870	1 532	4 774	-69	5 485
b) Short-term	9 113	8 342	14 172	9 792	12 435
2. Other loans	306	-1 855	-1 879	-1 869	-2 504
E. Total	32 042	39 755	48 337	73 376	63 129

Source: World Bank and International Monetary Fund.

^a For these same years, the IMF gives gross inflows of 2 760 (1990), 7 242 (1991), 12 577 (1992), 28 794 (1993) and 18 241 million dollars (1994).

^b Excluding technical cooperation.

TABLE 2

**Latin America and the Caribbean: Changes in the composition of
net foreign capital inflows, 1990-1994**
(Percentages)

	1990	1991	1992	1993	1994
1. Private foreign capital ^{ab}	67.2	83.2	94.8	93.8	99.7
2. Long-term foreign capital ^{ac}	68.1	58.6	49.6	51.9	58.8
3. Foreign portfolio investment ^{ad}	3.7	30.8	29.6	61.8	41.6

^a As a percentage of total net inflows (table 1).

^b Includes A+B+D (table 1).

^c Includes A+B.1+C+D.1.a+D.2 (table 1).

^d Includes B (1+2+3) (table 1).

A very important detail for policy formulation is that the share of net long-term capital inflows, which accounted for over 70% of total net inflows before 1990, went down from 68% in 1990 to 58.8% in 1994, after having sunk to around 50% in 1992 and 1993 (ECLAC, 1995c).⁹ In other words, the share accounted for by the type of capital with the biggest impact on real investment went down, while the share of the most speculative and volatile types of capital went up.

It is very important, for the purposes of this article, to identify the factors behind this inflow of foreign capital which has new characteristics and opens up new prospects for Latin American development.

A number of factors, both domestic and from outside the region, explain the reactivation of international capital flows to Latin America and the Caribbean. Some of them are of a structural or permanent nature, such as the growing globalization of production and internationalization of financial aspects, together with the ongoing consolidation of the economic and institutional reforms undertaken in the region. Others are of a more conjunctural or transitory nature, such as those connected with the downswing

⁹ Long-term net inflows include foreign direct investment, official finance, sales of bonds with a maturity of over one year, and net long-term loans.

in the economic cycle of the industrialized countries and the privatization and external debt conversion programmes applied in various countries of the region (ECLAC, 1995b).

It should be noted, however, that according to the figures for this five-year period this abundant inflow of external capital has not been reflected in a proportional rise in real investment levels (ECLAC, 1995a). Among the reasons for this is the fact that much of the capital that entered Latin America was connected with the purchase of existing assets,¹⁰ quite apart from the drop in the share of long-term capital in the total capital inflows already mentioned. Furthermore, domestic saving did not perform well in the first half of the 1990s. On the one hand, these foreign capital inflows helped to finance the growth of consumption, while on the other hand they displayed great volatility, especially in the case of capital attracted through non-traditional external financing mechanisms.¹¹ In addition, in some countries this inrush of foreign capital has exerted undesirable pressures on the exchange rate and money supply, giving rise to a new version of the region's external vulnerability.

2. The new flows of foreign direct investment

With regard to the renewed dynamism of inflows of foreign direct investment during the early years of the 1990s, it may be noted that in 1994 net income under this heading came to some US\$ 21 billion: much higher than the levels of the late 1980s, which were around US\$ 8 billion.

It should be noted, however, that some countries aroused much more interest among foreign investors than others (table 3). In absolute terms, the biggest flows have been directed, as always, to Argentina, Brazil and Mexico, highlighting the importance of the size of domestic markets or of markets expanded by integration agreements (NAFTA, MERCOSUR). This

¹⁰ In a sample which includes the seven biggest countries, more than 40% of the foreign direct investment which entered the region between 1988 and 1993 was accounted for by external debt conversion programmes (23%) and privatization operations (17.8%) (ECLAC, 1995c, table 11).

¹¹ These correspond in general terms to the growing tendency to transfer external finance operations to the stock markets, to the various forms of foreign portfolio investment, and to such mechanisms as American Depositary Receipts (ADRs) and Global Depositary Receipts (GDRs), etc.

is indeed a structural factor that weighs particularly heavily in the decisions of transnational corporations: even more than macroeconomic considerations, as may be seen in the case of Brazil (ECLAC, 1995c). A rapid comparison between these inflows and the size of the economies, however, reveals that recent inflows of foreign direct investment into Brazil are only 20% or 30% of those that traditionally corresponded to this country in the light of its size within the continent. Furthermore, the inflows into Argentina during the 1990s have been decisively influenced by the debt conversion programmes and, above all, that country's privatization process (ECLAC, 1995c). Only Mexico and Chile displayed, up to 1993, a capacity to attract such investments which exceeded their respective economic size. Another important recipient is Colombia, which, like Chile, displays a more consolidated stabilization and adjustment process than other Latin American or Caribbean countries. At the other extreme of the regional spectrum are the Central American and Caribbean countries, which –although they have the advantage of being geographically close to the United States and have been favoured by United States initiatives designed to increase cooperation and promote trade and investment– have not aroused corresponding interest among foreign investors. Exceptions to this are Costa Rica and the Dominican Republic, because of the investments made in their export processing zones (mainly for assembly operations) which have become fairly important since the late 1980s because of the substantial tax and tariff incentives offered.

Analysis of foreign direct investment in Latin America by geographic origin shows that it is still consistently dominated by the developed countries, but there is growing participation by developing countries, especially from the region itself, while new foreign partners are also appearing, such as New Zealand, Australia, Spain and Canada. Japan and the newly industrialized Asian countries are as yet little represented in this respect in Latin America and the Caribbean.

Some leading Latin American corporations are making investments in other Latin American and Caribbean countries (foreign direct investment abroad), especially as a result of the opportunities opened up for Latin American investors by the privatization programmes (ECLAC, 1995a). A new actor would thus seem to be emerging on the regional scene: Latin

TABLE 3

Regional breakdown of foreign direct investment, 1990-1994
(Percentages)

	1990	1991	1992	1993	1994
ALADI	90.0	89.3	91.4	96.2	92.0
Chile	7.3	4.1	4.8	5.4	8.4
Mexico	32.7	37.1	30.3	28.2	37.5
MERCOSUR	36.0	28.2	44.0	50.1	21.7
Andean Group	14.0	19.9	12.3	12.5	24.3
Central America	1.4	3.8	3.9	-1.1	4.4
Caribbean	8.6	6.9	4.6	4.9	3.6
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Source: International Monetary Fund and national sources.

American transnational corporations, which, although their antecedents go quite far back in time, have now been establishing a stronger and more promising presence during the 1990s. It would seem that the leading Latin American firms have decided to adopt patterns of behaviour befitting the era of globalization. These intra-regional or intra-continental investments, and their derived effects in terms of trade in goods and services,¹² are giving rise to a process of regional economic integration for market reasons which is coinciding to an increasing extent with the political will of the governments of the region. This is reflected in the rapid increase in the number of continental-scale economic integration and cooperation agreements (ECLAC, 1994).

Inflows of foreign direct investment and the activities of transnational corporations play an important role in linking up the host countries with integrated international production networks and developing such systems, which are undoubtedly the backbone of the process of globalization of the world economy. Through their foreign direct investment operations, transnational corporations mobilize their tangible and intangible assets (capital, technology patents, organizational and management practices, trade links, etc.) in order to increase their international competitiveness and global profitability, with direct effects on the ability of the host country to produce goods and services of better quality and in greater quantity. For

these same reasons, these asset flows are one of the forms of foreign investment with the greatest potential for stimulating the processes of gross capital formation and accumulation of production know-how in the host economy, as well as for making possible the linking-up of domestic firms with the production and supply networks of the transnational corporations and gaining access to the same tangible and intangible assets available in the transnational corporate system.¹³ Similarly—with regard to the Latin American companies which make investments abroad—the mobilization of such assets strengthens their home economies by permitting the companies in question to gain access both to the technology and research and development capacity available abroad and to foreign markets, through the local sales of their subsidiaries, intra-firm transactions, and other derived trading activities.

3. The sectoral breakdown of the total store of foreign direct investment: bases for competitive restructuring

In most Latin American and Caribbean countries, the total amount of foreign direct investment in the primary sector is not very significant, despite the abundance of natural resources. This is directly related to the wave of nationalization processes that took place in the region in the 1960s and 1970s, which extended

¹² Intra-regional trade has expanded considerably in the first five years of this decade, almost doubling its share of total Latin American and Caribbean trade.

¹³ A growing number of firms from various countries are subject to international-scale integrated corporate strategies involving not only the parent corporations but also their domestic and foreign subsidiaries, thus making up a "transnational corporate system".

not only to mining-type activities but also to banking and public services (Sigmund, 1980). However, since the late 1980s in Chile and during the present decade in the other countries of the region, economic reforms have opened up big opportunities for foreign investment in the extraction and development of natural resources (mining, petroleum, fisheries, agriculture and forestry) and in secondary and tertiary activities associated with these through various kinds of production linkages.

Most of the accumulated stock of foreign direct investment in Latin America and the Caribbean is in the manufacturing sector, which is understandable both because of the prolonged duration of the import substitution model and because of the process of nationalization of natural resource-linked activities referred to earlier. Up to the last decade, the prevailing policy in most of the countries of the region included explicit restrictions on foreign direct investment not only in the primary sector but also in the financial sector and other services. In most of these countries, foreign direct investment is concentrated in industries producing mass consumption goods for domestic markets, especially in the foodstuffs, beverages and tobacco branches but also in higher-technology activities such as basic chemicals, metal products and machinery, electrical and electronic products, etc. This industrial development has reached different levels of technological sophistication which are naturally higher in the economically largest countries of the region or –what amounts to the same thing– in the relatively most developed countries.

In the 1970s and the early 1980s, the region's industrial activities began to be restructured to give greater preference to branches of manufacturing making intensive use of natural resources, such as pulp and paper, petrochemicals, aluminium, vegetable oils, fish meal, etc.: i.e., branches producing highly standardized, widely used basic commodities ("industrial commodities") by processes which are capital-intensive, use modern but readily accessible technology, and involve continuous-flow production processes and big economies of scale. These branches include both locally-owned firms (national consortia), especially in the larger countries of the region, and subsidiaries of foreign companies (Katz, 1995). This restructuring in the period in question was due to different reasons in the different countries

of the region. In Chile, it was due to an early shift in the country's development strategy. In Argentina and Brazil, these investments were still made in line with the import substitution model, but these countries were then forced to export because of the drastic contraction in domestic demand in the 1980s. In Peru, a deliberate industrialization process was set afoot, inspired by the idea of import substitution, which gave priority to basic industry owned by domestic private or State capital.

During the crisis of the 1980s, the Latin American manufacturing sector lost much of its attraction for foreign investors. After various efforts at rationalization, some timid attempts at the industrial restructuring of manufacturing subsidiaries were made at the end of the decade, with the aim of adapting to the new economic scene. The exhaustion of import substitution industrialization in most of the countries of the region,¹⁴ the periods of crisis and subsequent stabilization, and the initiation of economic reforms have had a different time sequence in the different countries of the region.¹⁵ During this decade, export processing zones assumed growing importance and specific measures were adopted in favour of subcontracting, especially in Mexico and the Central American and Caribbean countries (assembly plants).

The 1990s are witnessing a new phase of selective expansion of industry in the region and increasing efforts to restructure the industrial platform inherited from the import substitution model. During the present decade, the efforts at economic stabilization and structural reform have been gradually and sequentially coming to fruition against the background of a new development strategy in the region which favours new forms of integration of transnational corporations into the regional economy. All this is strengthening competition at both the domestic and external levels, which is assuming major importance as a determining factor in microeconomic behaviour.

¹⁴ The symptoms of this exhaustion were less obvious in the larger countries of the region, especially Brazil.

¹⁵ In Chile, the crisis and recession began in the second half of 1973, in Argentina from 1978 onwards, in Brazil from 1981, and in Mexico in 1982, with strong repercussions on the other countries of the region.

Generally speaking, this new regional context is showing up the weaknesses in terms of competitiveness resulting from the import substitution model. This is particularly so in the case of the small and medium-sized economies of the region, where industrialization, sheltering behind the measures taken to protect the small domestic markets, was reflected, comparatively speaking, in smaller scales, lower degrees of technological sophistication, lower levels of industrial learning, and hence also a lower level of institutional development in the area of technological innovation. The process deriving from the struggle for survival has been particularly noteworthy in the foreign subsidiaries operating in the sectors of greatest technological sophistication or the most dynamic segments of domestic demand for manufactures. In the face of the opening-up of the economies to the exterior, the subsidiaries of foreign firms, as well as the existing domestic firms (especially in the motor vehicle and metal products and machinery branches), have found it impossible to keep up the degree of vertical integration and the industrial organization model applied in past periods and have reacted by seeking specialization and de-verticalization and hence raising their import coefficients and reducing the local production of intermediate goods (Bielschowsky and Stumpo, 1995, and Katz, 1995).

During the present decade, these events have had differing sectoral impacts in the Latin American economies. As a result of changes in the regulatory framework and the system of incentives, in some countries such as Argentina, Brazil, Mexico and Colombia the new regional macroeconomic situation has displayed falls in real interest rates and in the relative prices of consumer durables and automobiles, which, in combination with some supplementary measures, explains the reactivation of domestic demand for these goods (especially automobiles) (Katz, 1995). This fits in with the corporate strategies of the globalized transnational corporations of the motor industry in the larger countries of the region.¹⁶ In the case of medium-sized countries such as Chile, and especially Peru, among others, the degree of disinvestment in this sector was much greater, and in some cases nothing is left but memories of these activities, whose technological know-how was not absorbed by the countries in question.

At the same time, there has been a decline in other branches of Latin American industry that make intensive use of know-how and technology. Thus, in addition to the decline in the metal products and machinery branch there has been a similar deterioration in the electrical and electronic products industry: both branches where the transnational corporations have a dominant presence, especially in the smaller economies of the region. Faced with the option of restructuring or disappearing, in many cases the transnationals have opted for disinvestment (Bielschowsky and Stumpo, 1995, table 2).

The expansion of foreign direct investment in services and its decline in manufacturing during the 1980s has led to an increase in the relative share of foreign capital in the tertiary sector. Foreign direct investment in services such as commerce, transport and communications originally started as support for the transnational corporations' activities in the manufacturing sector. The economic reforms carried out in the region, however, meant the elimination of restrictions on foreign direct investment in some service activities, especially real estate, finance and insurance, and this, together with the process of maturity of the capital markets in the context of greater economic openness, has favoured the entry of foreign capital into these activities (banks, leasing activities, brokerage of securities and insurance, franchises, etc.). Another important factor in the growth of foreign direct investment in this sector during the 1990s has been the privatization programmes (in the areas of electricity, telecommunications, etc.), so that together these factors have led to a trend in foreign direct investment during the present decade which has had obvious effects on the total stock of such investment in the region.

¹⁶ During the last years of the 1980s, the corporate strategies of the transnational corporations in the motor industry have sought to increase their competitiveness in the United States market through strategies aimed at lowering costs by using their subsidiaries in Mexico (Mortimore, 1995b). In the case of Argentina and Brazil, whose motor industries experienced serious difficulties in the 1980s, solutions have been sought through sectoral agreements within MERCOSUR and other actions forming part of corporate strategies, such as the creation of the binational enterprise AUTOLATINA (Ford and Volkswagen).

III

Transnational corporations in the world economic setting

1. The international distribution of foreign direct investment

The map of the distribution of foreign direct investment in the world is undergoing significant changes, and at the same time its main vehicle—the transnational corporations—also display important changes in their international strategies and structures, in line with the emergence of a new international economic order.

The renewed inflow of foreign direct investment into Latin America and the Caribbean is in line with worldwide trends. The developing countries are displaying a growing capacity to attract foreign capital in the 1990s, with such inflows rising from 18% of total world flows of foreign direct investment in the period 1987-1991 to 37% in 1994. In contrast, the developed countries' share went down from 82% in 1987-1991 to 60% in 1994 (UNCTAD, 1995).

In respect of these growing receipts of foreign direct investment by the developing world, two points should be noted. The first of these is that the recovery in the developing countries' share, especially during the last three years, coincides with the reactivation of such investment flows to Latin America and the Caribbean. After having lost ground to the developing Asian countries subsequently to the crisis of the 1980s, the region has shown a clear recovery during the 1990s, although it has still not recovered its pre-crisis shares of foreign direct investment (Mortimore, 1995a).¹⁷ The second point is that, within the total for developing Asia, China is displaying an outstanding power of attraction, due no doubt to

¹⁷ During the period 1975-1979, the region received an average of 13% of total annual flows of foreign direct investment, while developing Asia received around 5%. In the second half of the 1980s the Latin American and Caribbean share of such investment fell to an average of 6%, while that of developing Asia rose to nearly 9%. In the first four years of the 1990s, the region's share of total world foreign direct investment has recovered to 9%, but developing Asia's share has continued to grow and now averages nearly 15%.

the colossal size of its domestic market and economic reforms which have promoted foreign investment even though the economy continues to be directed by the State.

2. Changes in corporate strategies

Because of their size and the nature of their activities, the transnational corporations stand out at the end of the twentieth century as leading actors in a technology-led and selectively globalized world economy.

These corporations have increasingly assumed the leading role in the process of globalization of the world economy, because of their outstanding presence in key sectors and markets.¹⁸ The transnational corporations are the main economic agent in the majority of the most dynamic international transactions (international trade, international finance, international transfer of technology and other production know-how, etc.). One-third of world production belongs to the sphere of activity of the transnational corporations, with their parent firms and foreign subsidiaries. In 1993, the total sales of the transnational corporations' foreign subsidiaries (US\$ 5.2 million million) exceeded the value of world trade in goods and non-financial services (US\$ 4.7 million million). Furthermore, over half of world trade consists of trading activities of transnational corporations and a significant part of that world trade is of an intra-firm nature (UNCTAD, 1994a and 1995).

Some of the main indicators in this respect are that there are some 40,000 transnational parent firms and 250,000 foreign subsidiaries, tens of thousands of strategic alliances and hundreds of thousands of subcontracting agreements, not to mention other

¹⁸ Between 1983 and 1990, total world foreign direct investment grew four times faster than world production and three times faster than world trade (Morán, 1991). Between 1991 and 1993, the world stock of foreign direct investment grew at the same rate as world exports of goods and services and 1.5 times faster than the total gross world GDP (UNCTAD, 1995).

inter-firm contracts for the transfer of production know-how (United Nations, 1992; Finkman and Montenegro, 1995). Within this context, the decision-making processes on production, trade in goods and services, technology and capital flows, international movements of highly-qualified professionals and inter-firm agreements are all interconnected in a complex and growing international network which is the concrete expression of the emergence of an integrated international production system.

This process of globalization of the world economy, which may be understood as the ever-increasing internationalization of business activities, was undoubtedly sparked off by the big speedup in technological development –especially of information technology– which gave rise to fundamental changes in industrial organization, in the behaviour and structure of firms, and hence in the corresponding corporate strategies.

Rethinking the Latin American economic scene with a view to formulating development strategies and policies naturally calls for understanding and knowledge of the ways in which the transnational corporations have reconfigured their strategies and organizational structures in order to link up integrated production systems at the international level. It is important to note that the same strategies applied in the past now have different impacts on the economies of Latin America and the Caribbean, which are now more complex and open to the exterior and are following a new style of development.

During the prevalence of the import substitution industrialization model in the region, the parent transnational firms were linked with a set of foreign subsidiaries which applied a stand-alone operating strategy designed to supply the parent firm with natural resources or to supply the local markets with manufactures or services which imitated the corresponding products of the parent company, which was usually the source of capital, management practices and technological know-how. This was the dominant form of organization of the transnational corporations which came to the region in the shape of mining enclaves or agricultural plantations; i.e., they were devoid of any links with the rest of the national production apparatus, for two main reasons: the low level of technical and production sophistication of the host economies, and the excessive protection of the domestic market associated with the import substitution model. The same thing applied to the import

substitution industries, which tried to reproduce the parent firm on a smaller scale.

The same pressures deriving from the globalization process –especially technical progress and economic liberalization– gradually altered the way international production was undertaken in the region and in the world. Competition to reduce the cost of standardized products, the convergence of consumption patterns worldwide and the reduction in transport costs finally led to the expansion of the geographic scope of corporate strategies. The great worldwide oligopolistic firms (in the motor industry and electronics) were able to combine economies of scale with the organization of low-cost suppliers all over the world. This led to the adoption of simple integration strategies under which the foreign subsidiaries, using technology provided by the parent firm, engaged in a limited range of activities designed to provide the parent firm with specific inputs. This latter firm thus became the coordinator of the various ways resources were used in the closed network of subsidiaries. This strengthened the subcontracting relationships which made their appearance in the region, especially during the 1980s, when export processing zones and assembly industries were promoted, as we saw earlier. In some countries of the region, the transnational corporations tried simple integration strategies in the motor vehicle and electronics industries, which later evolved somewhat timidly towards complex integration strategies.

A common feature of both the above types of strategies was that production within the transnational corporations continued to be fragmented and there was only limited internationalization of production activity across national borders. Finally, however, the growing liberalization of international economic transactions and the increase in international competition, together with the spread of information technologies, led to complex integration strategies in which the transnational corporations act as organizers of production and transactions in a transnational network of internal and external relations which may or may not involve participation in the equity of the firms concerned but nevertheless always serve the global interests of the transnational corporations. The parent firm is the centre of a web of activities which are interdependent but less formally managed (UNCTAD, 1994a).

Under these forms of strategy and organization, international production led by the transnational cor-

porations not only transfers goods and services across national borders, but also factors of production, organizational methods and technological know-how, in accordance with a unified administrative structure which gives rise to an intra-firm international division of labour. From this point of view, the transnational corporations, with their increasingly complex strategies, foster a qualitative change in the world economy, affect the international division of labour, promote the complementary relations between foreign trade and foreign investment, and are the main motive forces for growth and development in the new international economic order. Previously, foreign investment and foreign trade were alternative means for supplying external markets, but now there is a growing correlation between these two variables, especially in the developed countries, though it is acknowledged that networks of subsidiaries integrated at the regional level are an important determinant in the growth of intra-regional trade.

It would appear, however, that too much emphasis is being placed on the foregoing remarks about the trend of the transnational corporations towards complex strategies and global structures, especially in the case of Latin America and the Caribbean and the developing countries in general. Globalization is a worldwide phenomenon which is normally associated with corporate strategies involving complex integration. However, these strategies have been observed only in certain sectors which make highly intensive use of know-how and technology, while the other sectors continue to function in line with the former schemes of stand-alone operation and simple integration. In our region, the transnational corporations would appear to be trying out strategies of complex integration only in the larger countries where there is foreign direct investment in such industries as motor vehicles and electrical and electronic goods.

3. Patterns of behaviour of the transnational corporations

If we compare the behaviour of the transnational corporations operating in developing Asia with that of the similar companies in Latin America, we see that there are different patterns depending on the geographical origin of the capital involved, which have different impacts on the ability of the two regions to achieve competitive development and better linkages with the world economy (Mortimore, 1995a). The

transnational corporations which operate in developing Asia are mostly of Japanese origin, whereas those established in Latin America are primarily from the United States, with European companies in second place. There are substantial differences of behaviour between the United States transnationals and those of Japan, not only in terms of geographical preferences but also forms of ownership. The United States transnationals have majority shares in the capital of their subsidiaries operating in Latin America and the Caribbean, whereas the Japanese transnationals operating in developing Asia prefer minority shares in the equity of their subsidiaries and other forms of association through subcontracting relations or the granting of licences.¹⁹ The experience of developing Asia, especially South Korea and Taiwan, among the four "tigers",²⁰ seems to show that the strategy of association with the transnationals, or –which amounts to the same thing– the use of foreign direct investment, has had the advantage of facilitating a national process of industrial learning and absorption of technological know-how which has made it possible to progress from the adaptation and assimilation phase to a subsequent stage of innovation and competition with their own mentors, thus gaining entry into the new international economy and its competitive dynamics.

The transnational corporations' interest in using their tangible and intangible assets is aimed at promoting their international presence through various forms of foreign investment, provided that these are in keeping with their objectives of maximizing their rates of return. If these corporations externalize and trade their production know-how, a transfer of technology takes place which benefits both the corporations and the host countries, depending on the degree of institutional development of the latter. If the transnational corporations engage in foreign direct invest-

¹⁹ In the case of the United States and European transnational motor vehicle manufacturers operating in developing countries, 85% of their offshore production capacity was concentrated in Latin America, while the corresponding figure for the Japanese motor manufacturing transnationals in developing Asia was 89%. Likewise, most of the production capacity of the former (88%) was accounted for by subsidiaries with majority participation of foreign capital, whereas the Japanese transnationals had almost entirely minority shares in their subsidiaries, or Japanese foreign direct investment without control of the firms in question.

²⁰ I.e., leaving out the city-States of Hong Kong and Singapore.

ment activities through majority-owned subsidiaries, however, this leads in essence to an intra-firm transfer of technology, and the absorption and dissemination of that technology within the host country is much more limited, as we shall see below.

It may be concluded, from an examination of these patterns of transnational corporations' behaviour, that the effective transfer of technology through their various activities is not an automatic process, and much less is it the result of objectives inherent in their corporate strategies. In contrast, however, it should be a deliberate and explicit objec-

tive of government strategies that seek both domestic technological development, with a view to obtaining multiplier effects through a kind of "virtuous circle",²¹ and the formulation of active policies aimed at maximizing technology transfer through the various ways that the activities of transnational corporations fit into the Latin American countries' economies and through local initiatives for association and linkages with the transnationals. This should be done in such a way as to ensure that the latter's interconnected regional networks do not leave out the domestic activities of the host countries.

IV

Bases for the design of strategies and economic policy

1. Theoretical aspects regarding foreign investment and technology

As one of the many consequences of the process of globalization and/or transnationalization of the world economy, renewed interest has been aroused in theories on transnational corporations and international production. An equally important reason has probably been the appearance of internalization analysis,²² which has quickly come to occupy a prominent place in economic theory and especially in industrial organization theory.

Today, a major concern of the governments of the region is to establish suitable conditions for attracting increasing flows of foreign capital and thus preparing the ground for incorporating their countries into the globalization process and avoiding being left on the sidelines of the new world economic order. The present article does not propose to review the various theories claiming to provide a solution for this concern, but it does consider it in order to warn policy formulators of the implications of the types of theories they may deliberately or implicitly espouse.

In other words, if someone adopts the conventional "structure-performance" approach to the analysis of industrial organization, according to which the big corporations are to blame for market flaws, then policies are likely to lean towards State intervention, but if it is considered that transnational corporations are the solution to market flaws, then governments should do away with policies that are hostile to such corporations (Pitelis and Sugden, 1991).

Cantwell (1991) reviews the various theories on international production developed over the last 30 years. He classifies them in five groups. Two of them refer to different theoretical alternatives of the firm. The third is based on an analysis of internationally competitive industries. The fourth includes macroeconomic analyses which seek to explain transnational activity. The fifth integrates various partial theories (including the recent reformulations of Dunning (1993)) in a coherent and comprehensive framework –the so-called "eclectic paradigm"– which can be applied at the micro-, meso- or macroeconomic level and can serve as a conceptual reference base, without prejudice to broader theoretical studies.

²¹ In other words, improvement of domestic technological development indicators, including the level of skills of the labour force, strengthens the capacity to attract foreign direct investment in areas of higher technological content, which in turn promotes higher domestic technological levels.

²² Market internalization analysis holds that transnational corporations derive benefits from the high costs naturally associated with market transactions (natural market flaws). This obliges the transnationals to internalize these operations as an institutional resource for saving on those costs.

The eclectic paradigm provides a general framework for determining the degree and pattern of behaviour both of domestic production by firms belonging to foreign corporations and of production abroad by firms of the country in question. It is not strictly speaking a theory of transnational corporations proper, but rather a theory of the activities of firms forming part of internationally organized value-added chains. For this purpose, it is necessary first of all to understand and explain why a foreign direct investment operation is carried out.

In simple terms, this paradigm distinguishes between advantages of ownership (referring to those tangible or intangible assets of the transnational corporation which allow it to occupy a better position than a domestic firm in a given potential market); advantages of location (referring to natural, human or institutional resources which justify local production), and advantages of internalization (which explain why it is better to expand the corporate structure, by setting up a subsidiary in a given market, than to supply that market through exports).

Within the context of the eclectic paradigm and the new theory of the enterprise, if a transnational corporation possesses an asset (such as an industrial patent), then in order to increase its global sales and win a percentage of a given foreign market it can opt for one of three alternatives: to export, to grant a licence (to a local firm in a foreign country, through non-equity foreign investment), or to invest (by setting up a subsidiary in the country in question, through foreign direct investment). The dilemma between exporting or licencing is settled in the light of the contractual nature of the operation: the first option is for the short or medium term, while the second is of a long-term nature but involves the loss of ownership or control of the asset (in this case, technological know-how). The decision to invest—especially if the transnational corporation does not want to lose control of the asset—will depend on the balance between the market transaction costs (exporting) and the cost of internalizing the supply of the foreign market by setting up a subsidiary within the global structure of the transnational (investing).²³

²³ With regard to the new theory of the enterprise and the concept of transaction costs, see Caves (1982), Williamson and Winter (1991), and Graham and Krugman (1993).

2. The importance of an explicit development strategy and micro-macro relations.

Any analysis of development options in a given economic situation must start by acknowledging the decisive role normally played by an explicit development strategy and the corresponding regulatory frameworks. These are reflected in a system of signals or incentives which conditions both the micro-economic decision-making process and the resulting sectoral and macroeconomic performance, including the degrees of linkage with the international economy and the form of such linkages. This economic situation, which is in a constant process of change, and the explicit strategy, as society's response to that situation at a given moment, give rise to a set of reciprocal influences and different reactions between the micro and macro levels. This dynamic fits within the matrix of possibilities referred to earlier, which is affected by a set of external variables of different kinds, including ideology, politics, culture, the international setting, etc.

Foreign investment in the region has been strongly conditioned by the history and economic policy vicissitudes of the Latin American countries: that is to say, by the evolution of the system of incentives, of the regulatory framework and of the macroeconomic performance itself, which, as they act on national settings and production units with different structural characteristics, give rise to forms of micro-economic behaviour and sectoral results which are also different (Katz, 1995).²⁴ The sectoral behaviour of foreign subsidiaries in the regional economy has undoubtedly been strongly affected by the prolonged sway of the import substitution industrialization model, by the stage of nationalization of natural resource-based activities through which many Latin American and Caribbean countries passed between the 1960s and 1970s, and by the external debt crisis

²⁴ Katz (1995) considers the relations between macroeconomic and microeconomic aspects and observes that conventional microeconomic theory (theory of prices) is not designed to admit the possibility that there can be two economic agents, with different characteristics, which may react differently to the same given macroeconomic situation. This view stems from the conviction that the assumptions forming the basis for that conventional theory are at variance with a real situation where there is direct interdependence between individual economic agents, market flaws, and institutions supplementary to the price system that condition the conduct of such individual economic agents.

of the 1980s, which caused serious imbalances in the economies of the region and gave rise to the various stabilization and adjustment processes which preceded the major strategic turnaround in the development policies applied by the countries of the region as they entered the 1990s.

In this overall historical sequence, there were stages and countries with different degrees of economic openness, regulation and control of foreign capital. Up to the early 1980s, there was a model which placed the emphasis on regulatory and control aspects, contrasting with another which stood out because of its receptiveness and encouragement of foreign capital. Now, however, all national systems of treatment of foreign capital have been redefined to give them a promotional nature, and with very few exceptions they are openly in favour of non-discriminatory treatment of foreign investors and the elimination of mandatory prior authorization, reserved sectors, and restrictions on the repatriation of capital and remittances of profits. In line with the objective of competitive development, most Latin American countries do not generally take account, in their development strategies or the corresponding regulatory frameworks, of forms of foreign investment other than foreign direct investment, portfolio foreign investment or non-equity investment, as we shall see below.

The successive changes which have taken place in the systems of incentives, the regulatory framework and the macroeconomic variables during the different economic stages in question have conditioned the performance and microeconomic decision-making process of each of the different classes of firms operating in given national situations in Latin America and the Caribbean. These classes are sub-sets of firms differentiated by certain microstructural characteristics such as nationality of capital, size, degree of internationalization of their production, degree of complexity of their structures, and the technical nature of their respective production functions.

The other set of structural factors that must be taken into account refers to the characteristics of the national economic situations. These macrostructural factors have often had a decisive influence on microeconomic decision-making to deal with changes in the macroeconomic variables and the prevailing regulatory framework. Among these macrostructural factors, special mention may be made of the size of the domestic market and of markets expanded as a

result of integration agreements (see section II.2), the availability (frontier) of usable natural resources, geographic proximity to the most dynamic centres of external demand (especially the United States), and the production capacity and technology built up in previous periods (linked in this case with foreign capital) and hence capable of being restructured to make fuller use of this installed capacity, which is treated in economic calculations as "submerged costs".

Without pretending to make a structural characterization of the Latin American and developing Asian countries, it may be noted with respect to the strategic concepts of the two different situations that in developing Asia a harmonious relation has been established between the style of industrialization and trade liberalization, between financial deregulation and the treatment given to foreign direct investment, and between the absorption of foreign technology and export promotion. The result has been an increase in the international competitiveness not only of the foreign corporations operating in those countries but also of the local firms associated with them or acting as subcontractors, suppliers or licensees of the transnationals (which are the owners of intangible assets). The respective governments formulated clear strategic development options and active policies deliberately seeking the effective transfer of technology as the essential basis for competitive development, taking as their cardinal criterion the need to seek convergence between corporate interests and national objectives. In Latin America, in contrast, the economic reform process has faced the subsidiaries of transnational corporations with a dilemma worthy of Hamlet himself: to disinvest up to the point of ceasing operations entirely, or to embark on a process of microeconomic changes, linked with de-verticalization and specialization, in order to keep on operating competitively. This second option could be approached defensively (through rationalization), by minimizing investments and cutting staff costs in order to survive the keener competition, or offensively (through restructuring), by making investments and reorganizing in order to fulfill a specific function within the international production scheme of the parent company. It should be noted, however, that this microeconomic dilemma is being posed in a regional setting marked mainly by passive governments applying neutral policies (Mortimore, 1995a). This attitude contrasts with the practices of the de-

veloped countries, whose governments have maintained an attitude which is firmly in favour of the competitive development of their companies but is intelligent enough to avoid the danger of providing indiscriminate ongoing assistance without securing any sense of commitment on the part of the entrepreneurs (Vera-Vassallo, 1995b).²⁵

3. The lessons of the macroeconomic experience of the region

The experience of the region would appear to show that when the capital account is opened very abruptly and there is a massive inflow of external capital, the current account deficit can swell to an extent that affects the macroeconomic balances and, moreover, is difficult to sustain in the medium term. The mere ability to obtain big volumes of external financial resources does not automatically guarantee the strengthening of domestic saving and investment, and still less does it ensure a dynamic transition towards technical progress combined with international competitiveness. Such massive inflows of foreign capital can adversely affect two variables which are of key importance for efficient resource allocation: the exchange rate, and real interest rates.

The foregoing would appear to be confirmed by some relevant indicators for the region as a whole. Thus, the merchandise trade balance for Latin America and the Caribbean has gone down from a surplus of + US\$ 27.4 billion in 1990 to a deficit of - US\$ 15.2 billion in 1994, while the current account balance has deteriorated throughout this five-year period, sinking from - US\$ 6.2 billion in 1990 to - US\$ 50 billion in 1994.²⁶ These deficits on the region's trade, in goods and on its current account went down (to + US\$ 2.3 billion and - US\$ 35.5 billion respectively) in 1995,

after the Mexican crisis and the corresponding corrective measures, plus the favourable evolution of the international prices of both basic and industrial commodities. In 1994, the real effective exchange rate index for exports was below the 1990 level in the case of 14 countries of the region (out of a sample of 18 countries), in most cases by more than 10%. Although the monetary policy of the Latin American countries over the period 1990-1994 has been facilitated by the clear improvements in their fiscal management, maintaining a rate of expansion of the money supply in keeping with the goals in terms of economic growth and inflation has continued to be a challenge connected with the flow of foreign capital. Domestic interest rates have had to struggle with the conflict that exists between the evolution of competitiveness, monetary goals, and the need to finance the balance of payments current account deficit. In most cases, the objective of stabilizing prices has prevailed in the first half of the 1990s, and this has aggravated the unfavourable trends in the exchange rate and real interest rates. Opening the capital account has not led to equalization of domestic and external interest rates, as a static model without market flaws might have appeared to promise. In other words, the changes in relative prices have continued to favour non-tradeable goods, which makes no sense in the light of the prime objectives of the new competitive development strategy being adopted by the countries of the region.

The recent experiences of the region have given rise to much debate over the proper degree of graduality and the right sequence that should be followed in the pursuit of greater financial openness. Events are showing that in a process of economic liberalization the financial markets adjust much faster than the real markets. This means that the trends towards exchange rate appreciation, stimulated by financial liberalization, are faster than the trend towards exchange rate devaluation promoted by trade openness, with consequent effects on relative prices and the macroeconomic balances. In this respect, the region's experience seems to indicate that the opening-up of the capital account to the exterior should have been carried out *after* trade liberalization and domestic financial deregulation and reform. During trade reform, strict control should be maintained over external financial flows—especially of types of capital which are inherently speculative and highly volatile—in order to prevent their influence on revaluation of

²⁵ In section 4 of his article, referring to the promotion of competitiveness in the OECD countries, Vera-Vassallo (1995b) identifies 879 industrial support programmes applied in those countries in the period 1986-1989 which had a net average annual cost of US\$ 66 billion for the governments in question, equivalent to some 2.5% of the annual value added in the manufacturing sector of those countries.

²⁶ Mexico's trade balance went down from - US\$ 11 billion in 1990 to - US\$ 18.5 billion in 1994, while its current account deficit worsened from - US\$ 8.4 billion to - US\$ 28.9 billion over the same period (i.e., before the crisis).

the exchange rate and its adverse effects on external trade and investment, especially in tradeable goods (ECLAC, 1995a).

4. International transfer of technology: its forms and characteristics

Process and product technology, management know-how, design and standards, production methods and organization of work, quality control and management, and marketing –along with other elements of the overall technological package– are capable of being transferred across national frontiers in various ways that depend on the activities of the transnational corporations and their leading role in the generation, application and trading of these intangible assets.²⁷ For a better understanding of this transfer process, it is necessary to take account, on the one hand, of the implications of the various forms of transfer just mentioned and, on the other, of the features of the international transfer of technology to the Latin American and Caribbean countries, whether this involves an intra-firm operation (between the parent company and a subsidiary) or an operation in which the recipient is a local domestic firm.

Among the different forms of transfer associated with the activities of the transnational corporations, special mention may be made of the following:

i) *equity-related technology*, which is transferred through various levels of foreign direct investment in the equity of subsidiaries whose form of ownership may range from total foreign ownership to joint ventures with various proportions of domestic and foreign capital.

ii) *contractual technology transfer arrangements*, which involve various forms of inter-firm contracts such as licences, franchises, management contracts, consultancy or technical assistance arrangements, turnkey contracts, international subcontracting, quality control and standards services, etc.²⁸ These forms of transfer are also known as non-equity forms of investment.

iii) *embodied technology* contained in capital goods and intermediate goods.

In the first case, there is captive use of technology in the process of expanding international production: in other words, the transnational corporation does not lose ownership or control of this asset, the returns on which are included in or added to the remittances of profits. The technology is transferred from the parent firm to the subsidiary, but this does not necessarily result in a transfer to third parties or dissemination to the rest of the production system, except through the training of skilled personnel and possible spillover effects on forward and backward linkages. In the second case, there is a true transfer to the purchasing firm and explicit payment in the form of royalties, dues, commissions, etc. Dissemination to the rest of the production system is more feasible in this case, especially when the recipient firm is partly or wholly locally owned: a necessary but not of itself sufficient condition. In the third case, what is involved is a commercial transaction of tangible goods which have a market price that represents payment for the material and technological elements incorporated in those goods. The acquisition of machinery and equipment is the main source for the incorporation of technology, particularly in the case of the more traditional firms, as shown in a recent study by Rozas (1995). When these goods are used for production purposes, they require local engineering services, first of all in order to adapt them to the characteristics and circumstances of the local economy, and subsequently for repair and maintenance, which ultimately makes possible progress towards innovative activities. This development of engineering facilities represents an industrial and technological learning process whose internalization will be in proportion not only to the quantity and quality of real investment (i.e., capital goods), but also to the institutional development of the recipient economy and, hence, to its social absorption capacity. This form of transfer depends more on the macroeconomic management and regulatory framework of the country than on the capacity for bargaining with the transnational corporations.

The above forms of technology transfer may take place simultaneously and in combination. Indeed, there is a clear tendency among transnational corporations to include intra-firm technology transfer

²⁷ Another way of achieving technical progress is to promote domestic scientific and technological development, but this will not be discussed here as it is outside the scope established for this article.

²⁸ In other words, everything coming within the sphere of what is known as "quasi-equity" indirect foreign investment.

contracts in their foreign direct investment operations: that is to say, contracts between the parent firm and a subsidiary, or between subsidiaries.²⁹ These types of contracts are an excellent means of maximizing the global objectives of the transnational corporations, especially as regards rates of return (United Nations/CTC, 1987). In other words, as far as technology transfer is concerned, the preferred form in the eyes of the transnational corporations is its captive use through wholly- or majority-owned subsidiaries of the respective parent firm.³⁰ This is explained by reasons of strategy, because intra-firm contracts are particularly appropriate when product differentiation involving trademarks or brands is important, even though the technological process may not be very complex or sophisticated, or when the cost of losing control of the technological know-how is very high (United Nations/CTC, 1987). It is also explained by reasons of financial interest, because usually it is impossible for the transnational corporation to obtain the same return on this intangible asset—technology—except through the establishment of a subsidiary (United Nations/CTC, 1989).

5. Social capacity for the absorption of technical progress

The other determinant of competitive regional development is the “social capacity for the absorption of technical progress” of the recipient country. This is very closely linked with the introduction of highly significant institutional changes and advances in companies, in public and private organizations, and in the relevant government policies (Vera-Vassallo, 1995b).

²⁹ So far during the 1990s, nearly 80% of international payments of royalties, dues or other outlays for the use of technology have been of an intra-firm nature (UNCTAD, 1994a and 1994b).

³⁰ The opposite also appears to be true: i.e., that effective transfer is more feasible in the case of recipient firms wholly or largely owned by local capital.

A new cultural climate is developing in world society which reflects the firm conviction that the technological capacity of a country's enterprises is the crucial variable determining its competitive performance, and that this capacity is essentially national and can be developed through national actions (Nelson and Rosemberg, 1993). Within this climate, particular importance has been assumed—in terms of the economy as a whole—by the need to develop national innovation systems designed to strengthen individual and national capacity for negotiating, assimilating and learning technology and making innovations in this field.

A national innovation system may be defined as the network of economic agents and the set of policies and institutions that influence the introduction and dissemination of technical progress in the economy. Since in most developing countries technology is basically imported, a national innovation system, in a broad sense, includes policies on the treatment of foreign direct investment, policies on technology transfer and other forms of non-equity foreign investment, and policies on intellectual property rights and the importation of capital goods. In general terms, the whole range of rules and regulations governing and promoting the process of absorption and dissemination of technical progress form an essential part of national innovation systems.

National innovation systems also include the network of public and private agents and institutions which support or are directly engaged in scientific and technological activities, including research and development, the spreading of technology, and the creation of human capital. The dynamic interaction of these agents and institutions with production or business activity must be actively promoted. Finally, national innovation systems are directly influenced by the general economic policy climate and the system of incentives, since these determine to a large extent how many investments or efforts will be made to reduce costs, improve quality and provide a growing range of domestically and internationally competitive goods and services as a result of the new advances in technology.

Changes in company organization come within the field of industrial restructuring and retooling, and these processes too can be actively promoted.

V

Some reflections on current policy criteria and shortcomings

In view of the foregoing, it is obvious that policy regarding foreign investment in the broadest sense and its main vehicle, the transnational corporations, is of vital importance for the development of the region's economies in internationally competitive terms. In the previous paragraphs, a number of suggestions were put forward, and I should now like to emphasize, enlarge on, or supplement some of them.

The main conclusions point to the need for an integral and integrated approach, for two reasons. First, because in order to maximize the contribution that the transnational corporations and the various forms of foreign investment can make to Latin American and Caribbean development, the relevant policies must come within the framework of an explicit national development policy in which a specific role is assigned to the transnational corporations, which can bring not only physical and financial assets but also intangible assets in the field of organizational and technological know-how. These assets are the top priority of Latin American and Caribbean development.

The second reason is that such policies must link up smoothly with the features of the process of liberalization and greater openness, with domestic financial regulations, with macroeconomic policy and the system of incentives for the production of internationally tradeable goods, with the policies for the development and transfer of technology, and especially with the policies designed to promote systemic competitiveness. In other words, unlike what appears to be happening, it is not a question of promoting the indiscriminate inflow of financial assets while ignoring the really important aspect of that potential contribution, which is the international transfer of production know-how to the region. Above all, it must not be forgotten that this transfer must be matched by local capacity for the absorption of technology and the accumulation of production know-how, which not only makes possible the incorporation of technical progress and its spread to the whole of the production apparatus, but also –and

above all– strengthens the capacity for industrial and technological learning which is essential for the following stage of endogenous innovation and dynamic enhancement of international competitiveness.

According to the available information, generally speaking the economic and institutional changes made in the countries of the region have increased their capacity for the indiscriminate attraction of financial assets of the most varied nature. This has not always had positive effects, especially on the exchange rate and interest rates, which are variables of crucial importance for efficient resource allocation through the market. These financial flows have included a growing proportion of short-term capital, generally highly speculative and volatile, which explains why they have had only a limited effect on gross capital formation. According to a widely repeated argument, the exchange rate could be left to the action of the market forces: i.e., allowed to fall until the market itself makes the necessary corrections. These corrections would operate through an increase in the country risk or in the expectations for devaluation, so that the flow of capital would be interrupted. The attitude to be taken to a situation like this, however, will depend on the nature of the foreign capital entering the Latin American economies. If the flow of external resources is due to permanent or structural causes, there would be no point in taking action to seek an exchange rate higher than that determined by the fundamental variables of the economy, but if it is due to transitory causes (such as a privatization programme) or speculative operations (short-term capital seeking to take advantage of the fact that domestic interest rates are higher than the international levels), then letting the exchange rate fall would dangerously increase the balance of payments current account deficit in the medium term and would adversely affect both domestic and foreign investment and the production of internationally tradeable goods: i.e., those most directly connected with the aim of achieving competitive development.

Furthermore, the real technology transfer/absorption effect has also been very modest, because of poorly defined or incomplete strategies and piecemeal policies which give priority to the attraction of financial assets but are rather neutral or passive in terms of sectoral and technological guidance (Rozas, 1995).

The present policy attitudes of most Latin American countries are not based on an analysis of the characteristics and effects of the various forms of foreign investment, including not only foreign direct investment but also foreign investment of an indirect nature: both non-equity investment and portfolio investment.³¹ There is no record of any attempts to give preference to transnational corporations from particular countries or to favour certain forms of association with transnational corporations and their regional production and supply networks with the aim of maximizing the transfer of technology and thus integrating into the process of globalization of the world economy.

Most of the countries of the region display a feeble level of institutional development in both the public and private spheres, the State suffers from serious limitations in terms of its operational capacity, and in most of the region there is still only a limited capacity to take advantage of the potential synergies between the public and private sectors, although these are two spheres of activity whose concerted development and dynamic interrelation are of the greatest importance for the design and implementation of national development strategies.

Within this context, it will be readily understood that the most important elements are not the national statutes, systems or codes of treatment of foreign direct investment. Generally speaking, such systems are only one of the elements in an institutional structure which should extend all the way from the screening of resources from abroad in the light of macroeconomic criteria and the promotion of real investment to the establishment of an efficient national innovation system that should integrate companies, institutions and rules and regulations within the framework of an active policy to promote the trans-

fer, learning and absorption of technology, on the basis of the potential contributions of the transnational corporations and foreign investment, with a view to attaining greater capacity for innovation and endogenous technological development.

Few developing countries have paid much attention to policies to promote direct investments of their own abroad, because of the traditionally limited availability of foreign exchange and capital. Some developing Asian economies, however, have begun to attach importance to the advantages their domestic firms could derive in terms of gaining better access to external markets and resources, benefitting from their own processes of competitive restructuring, or seeking associations with emerging systems of international production. In Latin America, a long-standing practice in this respect is being resumed with the renewed recognition of the importance of this strategic option that companies of the region must explore if they do not want to run the risk of adversely affecting their competitive development. Noteworthy in this respect are the recent efforts of Chile, which has begun to follow in the footsteps of Mexico, which has a long tradition of investments in Central America and the United States, and Brazil, which is an important investor both in the region and the rest of the world and seems to be resuming its foreign direct investment under the incentive of MERCOSUR. National policy in this field should be linked up with the general scheme applied as regards liberalization and economic openness and, if accompanied by proper monetary management, can help to cope with tendencies towards exchange rate appreciation (UNCTAD, 1995).

With regard to the treatment accorded to foreign direct investment, most of the economies of the region seem to lack selective policies designed to help shape the production structure in terms of spatial distribution, sectoral composition, technological content, outward orientation and other aims in the field of production development, except for some measures connected with the establishment of export processing zones. From this standpoint, two types of special procedures could be envisaged, both based on the application of the mutual formula "incentives-performance requirements", with a pre-set time horizon. The first of these elements could be a special system negotiated on the basis of the official granting by competitive bidding of rights in respect of specific technology-intensive internationally competitive acti-

³¹ No reference is made here to movements of official capital and foreign bank loans originating from the transnational banking system, because although they are forms of financial investment from the exterior they are governed by different economic and political rationales.

vities, with a support base provided by the existence of domestic supply or demand for given intermediate or final goods, such as the production of intermediate and capital goods for the primary exploitation of some natural resource (mining or fisheries). After the award by competitive bidding, individual negotiations could be held on a case-by-case basis (United Nations, 1992; Morán, 1991, and Guisinger, 1992). The second element would be an automatic special procedure based on a set of automatic incentives for given specific levels of performance (Agosín, 1993) which would have the advantage of depersonalizing the granting of such rights and thus avoid the danger

of corruption. Selective policies of this type could bring the region closer to similar efforts being made in the developed countries and some developing nations, especially as regards the effective transfer of technology. Inasmuch as the proposed procedures do not contravene article III (national treatment) or article XI (elimination of quantitative restrictions) of the General Agreement on Tariffs and Trade (GATT), they are not incompatible with international rules and do not call for recourse to the safeguard clauses applicable to developing countries such as those of Latin America and the Caribbean.

(Original: Spanish)

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The Mexican *peso crisis*

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In the author's view, the Mexican financial crisis which erupted at the end of 1994 was not unique, although it did have some special features. Thus, since it could happen again, it would be desirable to gain an in-depth understanding of it. This article therefore analyses the process and underlying causes of the Mexican peso crisis. For this purpose, the author distinguishes three main periods. The first of these extends from the beginning of 1990 up to March 1994, and an analysis is made of the problems that were hatching and the policy options that were available. With regard to the second period—from March 1994 to 20 December of that year—the available options are likewise examined. In the case of the third period, attention is centered on the devaluation and the resulting crisis, and an appraisal is made of the way they were handled. The author considers that there are four main elements that explain the “rise and fall” behaviour of capital markets. These are: excessive optimism followed by exaggerated pessimism (attitudes partly linked with the structure of incentives of fund management companies); the fact that in a highly diversified market even the most trivial items of news can lead to a bout of speculation, because of the high cost of really full information; the existence of a conflict of interests among bankers operating simultaneously as investors and advisors; and “disaster myopia” that fails to foresee impending disasters.

I

Introduction

The speed and the massive scale of the financial crisis that followed the fairly small initial devaluation of the Mexican peso in December 1994 started an important debate on the causes of this crisis, its large scale and its international consequences. To what extent was the Mexican peso crisis different from previous crises, and should it therefore be characterized, as in the words of the IMF Managing Director (Camdessus, 1995a), as “the first major crisis of the 21st century”? What are the main elements which make this crisis different, and what are the elements of continuity with previous crises suffered both by Mexico and by other countries?

A precise answer to these questions is very crucial, both in order to help prevent “Mexico-style” crises from occurring again, and to ensure that management of such crises can be improved, so as to reduce the tremendous costs which the Mexican crisis has implied. The present analysis is based on the assumption that the Mexican peso crisis (though it had special features) was not unique, and that there is therefore a risk that “Mexico-style” crises could be repeated.

In the analysis of the causes of the Mexican peso crisis –and of its depth– consensus is emerging around a variety of factors. These include a) the large scale of the current account deficit, which had reached almost 8% of GDP in 1993 and 1994, as well as the fact that an important part of this deficit was funded by relatively short-term capital inflows; b) the Mexican authorities’ commitment to a relatively fixed (in nominal terms) exchange rate, and the fact

that a somewhat overvalued exchange rate was welcomed by a government strongly committed to reducing inflation very rapidly; c) the rather lax monetary policy pursued in 1994, when the reserves fell sharply; and d) the fact that such a high proportion of government debt paper was very short-term, that a high proportion of it was in the hands of non-residents, and that –during 1994– the government had allowed the transformation of a large part of its own debt into dollar-denominated paper. Also among the causes stressed –particularly by Mexican economists– is the “mishandling” of the devaluation, the so-called “errors of December”. Last but not least, unexpected extra-economic (political) events are seen to have played an important part in causing the crisis. This latter factor is particularly highlighted by the Banco de Mexico (Buirá, 1996; Gil Díaz and Carstens, 1996; Banco de Mexico, 1995). Indeed, the Banco de Mexico argues that “the crisis was fundamentally the outcome of a series of unpredictable political and criminal events”. (Buirá, *op. cit.*).¹

Though all these causes clearly provide a very important part of the explanation of the peso crisis –and of its severity– it would seem that other sets of factors, which were also important, have either been neglected or not sufficiently emphasized in the growing literature on the Mexican crisis. Firstly, it could be argued that the process of liberalization which had occurred in Mexico in the early 1990s in the financial sector and in the capital account was perhaps too rapid and –above all– that too many changes oc-

□ I would like to thank the Economic Commission for Latin America and the Caribbean (ECLAC) and the Swedish International Development Agency (SIDA) for providing financial support for this research. I am particularly grateful to Barbara Stallings for valuable suggestions. I am also most grateful to several colleagues for their insights and support for this research: they include Ariel Buirá, Angel Calderón, Guillermo Calvo, Ricardo Hausman, Shafik Islam, David Peretz, Arturo Porzecanski, Claudia Schatan, Tom Trebat, Joaquín Tres and René Villareal. I must also acknowledge some very useful comments from the referee.

¹ The Banco de Mexico thesis goes further and argues that monetary (and other) policy, even in 1994, was correct, on the basis of the evidence available at the time. As will be seen below, this paper disagrees clearly on this aspect of the Banco de Mexico’s interpretation, though it recognizes the difficulty of policy-making in changing and uncertain circumstances. Nor does this paper accept that the political and criminal events, important as they were in explaining the crisis, were the determinant explanatory factor.

curred at the same time for the economic system to adjust appropriately to so many large simultaneous changes while at the same time coping with a large surge of capital inflows. Thus, it could be argued that the Mexican capital account should have been liberalized slower and/or more controls and/or taxes should have been introduced in order to discourage short-term capital inflows when these surged. In this sense, it is noteworthy that both the IMF (1995a) and the BIS (1995) have recently explicitly recognized that –although having some limitations– measures taken by recipient governments to discourage short-term capital flows can –when combined with other policies that lead to sound macroeconomic fundamentals– play a positive role in effectively managing capital flows and thus reducing the likelihood of a costly financial crisis. Calvo and Goldstein (1995) even imply that measures such as controls/taxes on short-term capital inflows should become part of a revised “Washington Consensus”.

One particular aspect of the rapid liberalization of the capital account which (particularly with the benefit of hindsight) was –or became– problematic was that in late 1990 non-residents were allowed to buy Mexican government paper without any restrictions, whereas previously they were not allowed to do so.² This was part of a broader liberalization whereby foreigners were allowed to purchase bonds and money market instruments, as well as shares.

The process of rapid liberalization of the capital account coincided with a process of re-privatization of the banks. Furthermore, it coincided with a change in the conduct of monetary policy which meant that reserve requirements were eliminated very quickly as a tool of monetary policy.³ As a result, an important constraint on credit expansion by the banks was lifted, at the same time that the banking system was re-privatized. The changes in the conduct of monetary and credit policy, accompanied by re-privatization of banks (which meant that many bankers were not experienced in evaluating credit and market risks), was not accompanied by sufficient efforts at improve-

ment of bank supervision and regulation; in any case, improvements in bank supervision tend to be a slow process. Rojas-Suárez and Weisbrod (1995) argue that in general effective supervision of banks is a better instrument for restraining banks' credit expansion than reserve requirements, as it can more effectively restrict expansion of credit of risky segments of the banking system. However, this requires pretty sophisticated supervisory skills, which take a fairly long time to develop. Thus, in Mexico, in a context of relatively weak bank supervision and regulation, rapid reduction of reserve requirements and recent bank privatization, the stage was set for a large expansion of credit, including a big increase in consumer credit. Indeed, even though consumer credit was growing so rapidly, no measures were taken to constrain such growth, largely because this was seen as inconsistent with a more liberal stance in managing monetary and credit policy.⁴

It is interesting that similar patterns –very rapid deregulation of the financial sector and the capital account, accompanied by expansionary impulses on macroeconomic management, leading to financial crisis– have also occurred in other countries, including developed ones. Indeed, a recent IMF study (Drees and Pazarbasioglu, 1995) highlights such links in the case of the Nordic countries and shows, for example, how the elimination of controls on both lending and exchange restrictions triggered an important increase in lending to borrowers who had previously been credit-rationed, leading to a surge in lending to them, particularly as banks noticeably increased their willingness to take risks. As in the Mexican case, the authorities in the Nordic countries did not tighten prudential bank regulation quickly enough, and external shocks later led to quite large and costly banking crises in those countries.

Another set of factors which help to explain the severity of the Mexican peso crisis, but which are not sufficiently stressed in the literature,⁵ is that international capital markets, though generally efficient, do have some imperfections, and these may lead them to over-invest or over-lend in certain markets; however, once the excessive nature of the overinvestment is

² Interview material. See also Agosin and Ffrench-Davis (1996).

³ I thank Carmen Reinhart, of the IMF, for this point.

⁴ Interview material.

⁵ An important exception can be found in Calvo and Mendoza (1995).

perceived, there may be a huge *over-reaction*, with flows not only declining sharply but even becoming strongly negative.

There would seem to be four main elements that explain this “boom-bust” behaviour in modern capital markets. Firstly, over-optimism followed by over-pessimism is explained partly by fund managers’ behaviour, linked to their incentive structure.⁶ Thus, if a fund manager (or other investor) is wrong when everybody else is right (that is he/she misses out on a very profitable opportunity that everybody else is taking), his/her institution will be punished by the market. However, if a fund manager is wrong when everybody else is wrong, this will not be so serious, as the market is less likely to punish his/her institution, and indeed, there may be a bailout to help deal with this “collective mistake”. This behaviour leads to “bandwagon” effects or “herd behaviour”.

Secondly –and this helps mainly to explain the rapid withdrawal of funds out of Mexico after the initial 15% devaluation– it can be argued that in a highly diversified world capital market, where in-depth information is expensive to obtain, it may be rational for investors to react to even “small news”. As a consequence, as Calvo and Mendoza argue, relatively small bad news can lead to a major speculative attack, even if the news is not related to any important change in economic fundamentals. This behaviour can be explained by the important trade-off that foreign investors have between diversification and information. The more diversified an investor, the fewer his incentives to obtain expensive information. Indeed, as the number of countries in which to invest increases, the marginal benefit from information-gathering falls. As a result of these trends, “herding” is exacerbated by an increase in responsiveness by investors to “market” rumours or news, rather than to in-depth analysis of fundamentals.

Thirdly –and this helps largely to explain the rapid inflow of foreign portfolio investors into Mexico in 1991-1993– there seemed to be a conflict of interest between the role of investment bankers as advisors (for example, to U.S. mutual funds, which had only small research departments of their own and therefore relied on advice from investment bankers) and the fact that the same investment banks had their

own assets in the country, whose value they wanted to protect.

Also, most institutions were on the “sale side”: even when they were apparently providing independent advice, institutions like mutual funds were basically trying to market their products in order to obtain commissions.⁷ For this purpose, they highlighted the high yields and played down the risks. Indeed, even when information provided by the Mexican authorities was somewhat incomplete, and there were reasons to believe that the situation could be deteriorating (e.g. in the second half of 1994), analysts chose to ignore the lack of information.⁸

The fourth element relates directly to the theory of financial markets and its concept of “disaster myopia” (Guttentag and Herring, 1984). Indeed, the article by Galant (1995) in *Institutional Investor* highlights how “observers displayed a basic inability to envision complete calamity”. It quotes, among others, David Lubin (an economist at the Hong Kong and Shanghai Banking Corporation, London) as saying “One finds it difficult to see disasters... you have a kind of built-in mechanism that tells you that things are going to manage themselves smoothly.” Indeed, during the first period, of over-investing, rationing constraints are excessively loosened; this implies that investors’ perceptions of risk can deviate from reality. Furthermore, competition can imply that, as prudent lenders or investors are driven from the market, they are replaced by those willing to accept what is seen as a low-probability danger. These trends can be explained by institutional factors, such as the brief periods during which the performance of loan officers or investment managers is evaluated, for purposes such as salary bonuses.

We will follow relatively strict chronological order. Thus, we will first (in section II) examine the apparently golden period from the early 1990s till March 1994, but pointing to the clouds which were already gathering and the policy options available. In section III, we will analyse the period from March 1994 to 20 December 1994, again emphasizing the policy options. Finally, section IV will focus on the devaluation (analysing possible errors in its handling) and the resulting crisis, as well as returning to the issue of capital market imperfections.

⁶ I thank David Peretz, of the U.K. Treasury, for valuable insights on this point.

⁷ Interview material. See also *Emerging Market Investor* (1995) and Galant (1995).

⁸ Interview material.

II

The apparently golden years: 1988 to early 1994

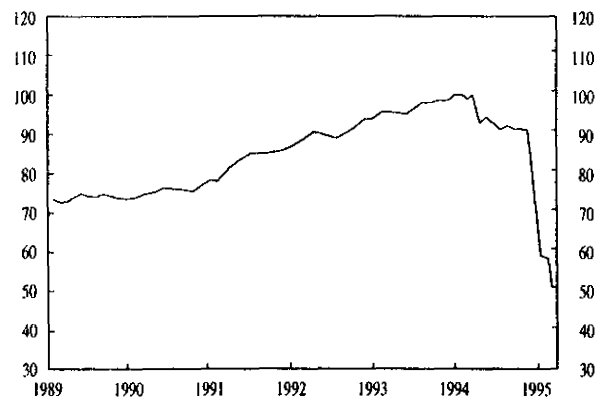
In the aftermath of the Mexican peso crisis, when so many of the analyses of the Mexican economy are so gloomy, it is important to stress that between 1988 and 1993 Mexico not only had many important achievements but was above all widely praised internationally as a major "success story" of the process of economic reforms and macroeconomic stabilization.

Indeed, during this period Mexico followed a strategy of economic adjustment and reform that strengthened the fiscal consolidation and structural changes initiated after the 1982 debt crisis. This strategy, which had the active support of the IMF (Camdessus, 1995b), aimed at restoring macroeconomic stability, reducing the role of the public sector in the economy and laying the foundations for private-sector-led growth. The key elements of the strategy were the maintenance of fiscal and monetary discipline, a major debt restructuring exercise, and a comprehensive programme of structural reforms, including privatization and trade liberalization. The liberalization of the financial sector and of the capital account discussed above were thus part of a broader policy thrust. The implementation of the North American Free Trade Agreement (NAFTA) was seen as a culmination of the reform process, as a prize to the successful reformer, and as providing an "external lock" on the reform process.

Certain macroeconomic variables followed an exemplary evolution. Thus, the overall public sector financial balance reported a surplus of almost 1% of GDP in 1993, compared with a deficit of 11% of GDP in 1988, while inflation was reduced from 160% in 1987 to 8% in 1993.

Beginning in 1988, the exchange rate was used as the main nominal anchor, with income policies playing an important supporting role. As often occurs with such a policy, nominal exchange rate-based stabilization results in a real appreciation of the local currency, as it takes time for the differential between domestic and foreign inflation to fall. As may be seen from figure 1, the Mexican real exchange rate (using

FIGURE 1
Mexico: Real effective exchange rate^a
(1980=100)



Source: IMF information bulletin.

^a Index, weighted by foreign trade, of the nominal exchange rate deflated by seasonally adjusted consumer prices. An increase indicates appreciation.

consumer price indexes) appreciated by around 30% between the beginning of 1989 and late 1993. Even though the exchange rate regime underwent several changes, going from a fixed to a crawling peg and then to an adjustable band (which later had its boundaries widened), the appreciation continued (Lustig, 1995). The real exchange rate appreciation was exacerbated by the large capital inflows which Mexico received in the early 1990s, which led to a "financial Dutch disease" type of phenomenon. These capital flows had two important features. Firstly, they were very high, both in absolute amounts and as a proportion of GDP (Devlin, Ffrench-Davis and Griffith-Jones, 1995). Secondly, as can be seen from table 1, an extremely high proportion of the capital flowing into Mexico (compared not only with Asian countries but also with other Latin American developing countries) came as portfolio investment, reaching 67% of total inflows in 1990-1993. As experience later showed (but as was also quite predictable), portfolio flows are potentially more volatile,

TABLE 1

Composition (%) of Mexican and other countries' capital inflows (1990-93)

	Mexico	Argentina	Chile	Thailand	Indonesia
Portfolio investment	67	37	22	6	-3
Foreign Direct Investment	21	42	31	20	28
Other (inc. bank lending)	12	21	47	75	75
Total	100	100	100	100	100

Source: Banco de México; IMF, *International Financial Statistics*, January 1995.

and more prone to reversals (particularly if such a high proportion of the portfolio inflows was into very short-term government paper).

During 1990-1993, capital inflows were dominated by flows to the private sector, which benefitted from the internationalization of Mexican capital markets, particularly in respect of equity and bonds, which provided inflows of US\$ 12 billion and US\$ 24 billion respectively (see table 2). Until the late 1980s, foreign equity participation in Mexican companies was restricted, and at the end of 1989 non-residents accounted for only 6% of Mexico's equity market capitalization. Foreign participation rose rapidly in the wake of the Stock Market Law of December 1989, which liberalized access for foreign investors. As a result of this (and other factors) net foreign purchases of Mexican equities—which had been less than US\$ 1 billion annually up through 1989—reached a total of US\$ 28 billion during 1990-1993. By the end of 1993, non-resident investors accounted for 27% of the capitalization of the Mexican market: a figure which remained broadly unchanged through 1994.

Mexico returned to the international bond market in 1990, and placements rose over the following three years, totalling US\$ 24 billion during 1990-1993. Initially, Mexico's access to these markets depended on the provision of enhancements or high-yield spreads. However, as Mexico's credit ratings improved, the need for enhancements and wide spreads diminished. By this point, Mexico was regarded as "a benchmark bond issuer". Indeed, Mexico was one of the few former highly indebted countries to receive just below investment grade ratings from major US credit-rating agencies; interestingly, Mexico's rating was not downgraded during 1994 (when the situation deteriorated), but only after the devaluation and crisis.

Another important item of capital inflows was foreign purchases of Mexican government securities.

During the 1980s, peso-denominated government securities were sold only to Mexican residents. In 1990, however, the Government allowed direct sales to foreign residents (foreign residents had already been able to make some purchases previously, through secondary purchases from Mexican banks). In 1991—the first year without restrictions—foreigners invested US\$ 3.4 billion in government paper. Purchases then rose rapidly, totalling over US\$ 18 billion during 1991-1993 (table 2). During this period, non-residents accounted for virtually all of the net increase in sales of government securities. It is paradoxical that an important part of the issue of government securities in those years was *not linked to financing fiscal deficits*, but was largely connected with the monetary sterilization of capital inflows, and that that government paper led to new inflows.⁹ The proportion of government securities held by foreigners during this period rose from 8% at the end of 1990 to 57% at the end of 1993. It is noteworthy that foreign investors held a larger proportion of short-maturity bills (1-12 month National Treasury Certificates (CETES)) and a smaller proportion of longer-maturity notes (1 and 2 year bonds) than did residents; as a consequence, the average maturity of non-resident holdings at the end of 1993 was estimated at 280 days, compared to 350 days for residents' holdings.¹⁰

Another important point during 1990-1993 was that the private sector regained access to international bank financing, with new credit flows totalling US\$ 22 billion (table 2). Two-thirds of this amount represented inter-bank transactions, including dollar-denominated deposits (for example, certificates of deposit) to Mexican banks.

⁹ I thank Ricardo Hausman for this point.

¹⁰ Interview material.

TABLE 2

Mexico: Summary capital accounts, 1988-1994
(Millions of US dollars)

	1988	1989	1990	1991	1992	1993	Prel. 1994
Current account	-989	-5 823	-7 450	-14 649	-24 439	-23 400	-28 786
Capital account	-5 774	4 745	10 889	22 232	26 361	30 491	10 866
Official capital	265	-1 124	-1 820	3 424	7 940	7 882	-400
Medium- and long-term borrowing	1 459	-29	6 371	1 226	-3 821	1 601	1 447
Commercial banks	-1 483	-1 199	4 555	-2 362	-5 744	-1 982	-725
Multilaterals	776	468	706	867	487	212	-165
Bilaterals and suppliers (excl. US Govt. commodity credits)	556	616	688	1 422	1 246	171	-896
Commodity credits	221	159	146	-377	-251	-166	-37
Bond placements and other	1 389	-73	276	1 675	441	3 366	3 270
Short-term	219	-199	483	529	1 843	1 063	2 172
Non-resident purchases of Mexican Government treasury bills ^a	-	-	-	3 406	8 147	7 013	-1 942
TESOBONOS	-	-	-	253	-62	1 063	14 338
Other	-	-	-	3 153	8 209	5 950	-16 280
Other government financial assets	-1 412	-896	-8 674	-1 736	1 772	-1 794	-2 076
Debt-equity swaps	-868	-389	-85	-199	-	-	-
Long-term trade lending	-544	-507	-530	19	63	-281	-41
Debt enhancements ^b	-	-	-7 354	-604	1 165	-564	-615
Other	-	-	-706	-952	544	-948	-1 420
Private capital	-6 039	5 869	12 709	18 807	18 421	22 609	11 266
Direct investment	2 595	3 037	2 633	4 762	4 393	4 389	7 980
Equity investments	-	493	1 995	6 332	4 783	10 717	4 088
Bond placements	-	-	1 099	1 340	3 559	6 318	2 061
Banking sector	-	-	-	-143	621	1 738	-183
Non-bank private sector	-	-	1 099	1 483	2 938	4 580	2 244
Net external credits	-3 317	-170	4 647	8 576	2 577	6 260	2 417
Banking sector	-	-	4 250	6 195	449	3 428	1 181
Non-bank private sector	-	-	397	2 381	2 129	2 832	1 236
Increase in assets abroad (-)	-1 576	-1 860	-110	538	3 780	-1 809	-3 394
Interest earnings held abroad ^c	-1 576	-1 860	-1 747	-1 446	-837	-731	-1 188
Other	-	-	1 637	1 984	4 617	-1 078	-2 206
Other including errors and omissions	-3 741	4 368	2 445	-2 740	-671	-3 266	-1 886
Net international reserves (- = increase)	6 763	1 078	-3 439	-7 583	-1 923	-7 092	17 919

Source: Banco de México, 1995, and IMF estimates.

^a Excludes repayments associated with implicit interest earnings on zero-coupon treasury bills, such as TESOBONOS and CETES.

^b Corresponds to implicit reinvestment of interest earnings on collateral for restructured commercial bank debts.

^c Corresponds to assumed reinvestment of interest earnings of foreign investments.

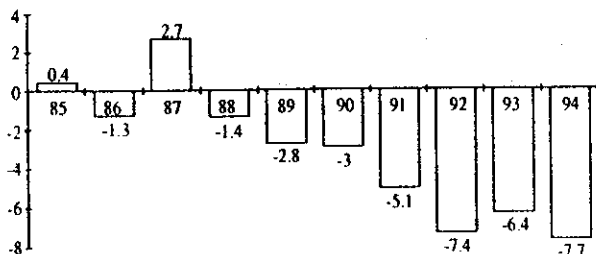
On the whole, the Mexican authorities did not discourage these capital inflows. However, faced with massive inflows into short-term dollar-denominated certificates of deposit, in 1992 the monetary authorities put a cap of 10% on the share of foreign liabilities in total liabilities of banks. In addition, an amount equivalent to not less than 15% of foreign currency liabilities had to be placed in low-risk or risk-free assets (Gurría, 1995). Initially, this led to a decline (in 1992) of capital inflows intermediated through the banking system, but after the banks had adjusted their portfolios, capital inflows through them re-started, in line with the rapidly growing balance sheets of Mexican banks.

The rapid and sustained growth of the current account deficit since 1988 (figure 2) peaked at 7.7% of GDP in 1994. To an important extent, this growing disequilibrium in the current account was explained by the appreciation of the exchange rate. Up to 1993, it was funded by the rapidly growing net capital inflows. Indeed, as the net capital inflows were even larger than the current account deficits until late 1993, the foreign exchange reserves increased in spite of those deficits.

An important point to mention is the extent to which the current account deficit was explained by private or public deficits.

FIGURE 2

Mexico: Current account deficit
(As a percentage of GDP)



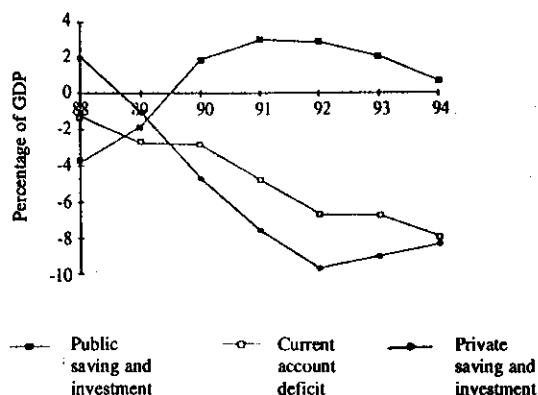
Source: Banco de México.

In 1994, the current account deficit (of around 8% of GDP) was practically all explained by a private sector net savings deficit, with the fiscal accounts showing a small surplus (figure 3). The deterioration of the current account reflected an excess of private investment over private savings; the majority of external borrowing in the 1990s was by private companies and banks. Until 1993, the public sector's net indebtedness did not increase much, as gross liabilities—largely issued to sterilize the monetary effects of the capital inflows—were matched till late 1993 by increasing foreign exchange reserves (Sachs, Tornell and Velasco, 1996). Here, there is a sharp contrast with the situation that led up to the 1982 Mexican debt crisis. In 1981, there was a similar scale of current account deficit as in 1994 (around 7% of GDP), but this was related to a *fiscal deficit* of around 13% of GDP and a positive net savings level of the private sector of around 6% (Villareal, 1995).

Thus, the current account deficit in the early 1990s occurred in spite of basic fiscal balance (though according to some sources there was some deterioration in the fiscal accounts in 1994), and could almost entirely be explained by dissaving by the private sector. The fact that the counterpart of the current account deficit was not a fiscal deficit but a private one probably contributed to the “benign neglect” with which the Mexican authorities treated the current account deficit (a similar situation, and reaction, had happened in Chile in the early 1980s and in the United Kingdom in the late 1980s, also with problematic consequences). The obvious lesson is that it is the *scale* of the current account deficit that matters, and not whether it originates in deficits in the public or private sector.

FIGURE 3

Mexico: Saving-investment gap and current account



Source: Sachs, Tornell and Velasco, 1996.

The key question is whether, in the apparent golden years, Mexican economic policy could have been conducted differently, and whether this would have diminished the likelihood (and/or severity) of the crisis that later occurred. It should be mentioned in this context that there was a group of Mexican economists who repeatedly warned of the dangers involved in exchange rate appreciation and growing current account deficits. Because of the generalized euphoria (both in Mexico and abroad), however, their views had little impact on Mexican policy.

In the first place, exchange rate policy could have been conducted differently, as some economists both in Mexico and elsewhere suggested (Dornbusch and Werner, 1994; Leiderman, Liviatan and Thorne, 1994; Ros, 1994). The Central Bank could have widened the exchange rate band further and/or increased the daily depreciation of its ceiling in order to curb the appreciation of the real exchange rate. Even though this might not have immediately changed the nominal exchange rate, it would have increased the flexibility for future policy changes if capital flows slowed down or reversed themselves. Indeed, it is worth stressing that the Mexican peso crisis was precipitated (though not caused) by a 15% movement of the band: if the band had been wider or at a more appropriate level, such an explicit shift might not have been necessary.

Why did the economic authorities not take such a course of action? First, the dominant euphoria in and about Mexico—and the fact that the foreign exchange reserves were rising during this period—lulled

the authorities into a false, albeit somewhat understandable, sense of confidence. The entry of Mexico into NAFTA strengthened this. Secondly, the Mexican authorities assumed that the problem of the growing current account deficit was relatively temporary, while the surge in capital flows was relatively permanent, or at least would last until the current account deficit started to improve. Both assumptions were dubious and of very high risk, as several institutions and economists warned (ECLAC, 1994; Griffith-Jones, 1994). Thirdly, the Mexican authorities gave very high priority to lowering inflation to single-digit figures and saw the exchange rate regime—and an appreciating currency—as a very valuable tool for this purpose. Another of the paradoxes of using the exchange rate mainly as a tool for bringing down inflation is that, by allowing a strengthening of the real exchange rate and hence an increase in the current account deficit, the country risks the possibility of a very large devaluation, which will then imply a significant increase in inflation. Therefore, excessive emphasis on the use of the exchange rate to bring down inflation rapidly in the short term, as well as insufficient attention to maintaining a competitive exchange rate, may be undesirable even from the perspective of a sustained decline in inflation.

However, it was not only exchange rate policy—important though it was—that should have been conducted differently. As argued above, the timing and sequencing of liberalization and privatization in the financial sector and liberalization of the capital account could have involved more gradual changes, and fewer simultaneous changes. Within four years, not only was the banking system re-privatized, but also the conduct of monetary policy was changed drastically, as reserve requirements were reduced and quantitative credit controls were eliminated in the late 1980s. Calvo and Mendoza (1995) attribute the near doubling of the M2 money multiplier, from about 4.2 at the end of 1988 to 8 in December 1994, to these two changes; they further see this as a major factor in explaining the large rise in M2 (in real terms) which occurred as from the late 1980s. After many years of nationalization, the newly privatized commercial banks had little experience and inappropriate organizational systems to adequately assess credit and other market risks, as well as monitor and collect loans. According to the IMF (1995b) the strengthening of public finances (which reduced public sector demand for bank credit) gave rise to a shift

towards more risky borrowers. Combined with lack of proper supervision and inadequate regulatory standards, this contributed both to a large expansion of commercial bank credit *and* to an increase in non-performing loans. Between 1987 and 1994, commercial bank credit grew by over 100% in real terms, with credit for housing increasing by almost 1000% and credit for consumption by over 450% (Ramírez de la O, 1995, based on Banco de Mexico data), with quite a substantial part of those large increases occurring before capital flows surged. No attempt at regulating or restricting such credit was made. The poor quality of some of these loans, even before the crisis, meant that the ratio of overdue loans to total loans grew from 4% in 1991 to 8% in late 1994.

At the same time that big changes were occurring within the financial sector, rapid liberalization was taking place on the Mexican capital account. This meant that non-residents could now buy shares, government paper, etc. (In part, these changes were a response to the fact that non-residents had previously been able to get round existing restrictions, for example through secondary purchases of government securities from Mexican banks. However, the fact that the authorities chose to liberalize completely rather than try to reinforce restrictions on non-residents reflected the prevailing liberalization philosophy). Furthermore, regulatory changes in the United States (such as rule 144-A) and elsewhere were facilitating sales of Mexican (and other Latin American) shares in international markets (Griffith-Jones, 1992). The combination of all these changes facilitated and promoted the big surge in capital flows to Mexico. This surge—largely intermediated through the banking system—contributed significantly to the credit expansion to the private sector (which must go a long way towards explaining the sharp decline in private net savings discussed above).

The criticism here is not of the measures themselves, as they are in the long term both correct and unavoidable, but of the pace at which they were introduced. Also, particularly with the benefit of hindsight, it seems worth asking why compensatory measures were not adopted, for example to curb excessive capital inflows via measures such as reserve requirements along the lines of those imposed by Chile (Ffrench-Davis, Agosin and Uthoff, 1995), or why greater efforts to improve bank supervision and regulation were not made?

This latter criticism cannot be confined to the Mexican authorities, as there were also so many in the economics professions –and in the international institutions– who advocated speedy and simultaneous liberalization as the most efficient path towards economic growth, and praised Mexico as a model pupil of such a path. It is thus interesting to recall that, for example, the IMF in its last Staff Report for Mexico's Article IV Consultation before the crisis (issued in February 1994) praised Mexico's "considerable success in its comprehensive programme"; it did *not* call

for any change in the exchange rate policy, and while it projected different scenarios for Mexico's Balance of Payments (up to 1998), *all* of them assumed high and steady capital inflows. To be fair, it did mention the need for flexibility and pragmatism in responding to changing circumstances in financial markets, but it did not go into more specific details. It should be stressed, in contrast, that the literature on the timing and sequencing of reforms had already emphasized the need to proceed more cautiously with the liberalization of the capital account and to leave that step till the last.

III

February-December 1994: the clouds darken

This period in our analysis starts in February 1994: the month when the level of foreign exchange reserves peaked at US\$29.2 billion (Banco de México, 1995). As the reserves had grown so much in the first two months of 1994, there was reportedly some discussion of the need to revalue the peso.¹¹ Capital inflows in January and February were strong as political uncertainties linked to the Chiapas uprising were offset by the continuing favourable impact of the approval of NAFTA by the United States Congress.

However, important changes in United States monetary policy, which coincided with dramatic and unexpected political developments in Mexico, significantly diminished the attractiveness of Mexico both for foreign and domestic investors. In February 1994, the U.S. Federal Reserve decided to raise interest rates from 3% to 3.25%. Further rises were expected, as the U.S. monetary authorities were keen to slow the rapid pace of growth of the United States economy. Indeed, in the course of 1994 U.S. interest rates increased six times, with yields on that country's Treasury Bills increasing from 3% in January 1994 to 5.6% in December 1994. The differential between United States and Mexican Treasury Bills narrowed in February 1994 as U.S. rates rose and –surprisingly– Mexican rates fell by 1% as monetary conditions were eased. The differential increased further when United States interest rates increased a second time (on 22 March).

It was, however, the assassination of the presidential candidate, Luis Colosio, on 23 March which seemed to precipitate more directly the big outflow of capital and a dramatic decline of foreign exchange reserves, which fell by almost US\$11 billion between 23 March and 21 April (figure 4).

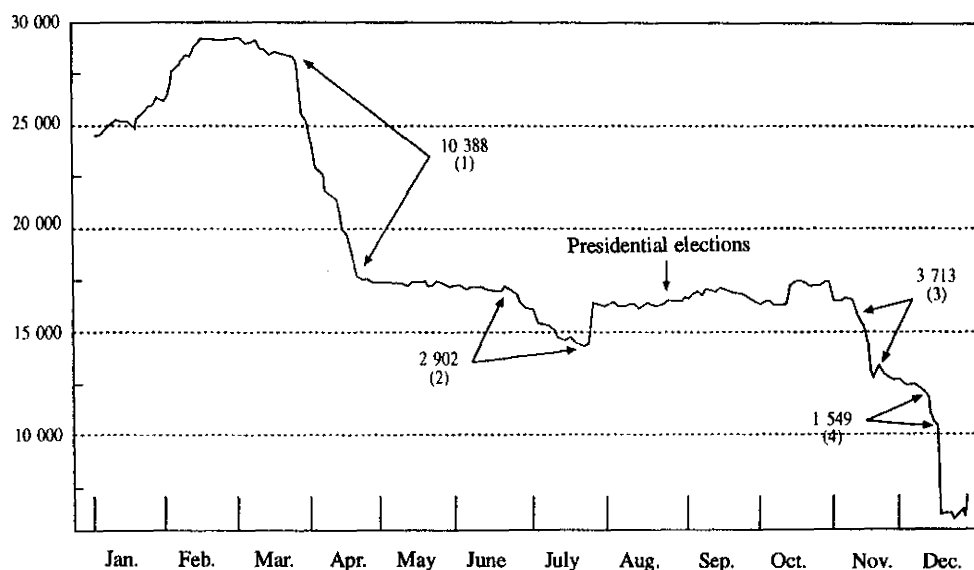
In fact, throughout 1994 it was the combination of the simultaneous increase in United States yields (well above the very low levels of the early 1990s) and the increased perception of political instability –and therefore political risk– in Mexico which discouraged the flow of capital to that country and indeed caused outflows: the differential premium, compared with the differential risk (especially as between investing in Mexico and in the United States) had now fallen significantly.

Faced with this change in perceptions –both by domestic and foreign investors– the Mexican authorities had two options. The first option would have been to tighten monetary policy significantly and increase the crawl or widen the exchange rate band more: the tightening of monetary policy would have both started to diminish the large current account deficit (though with a lag) and, more immediately, would have increased significantly the differential premium between investing in Mexico and the United States, thus making Mexico more attractive for investors. Accelerating the crawl or widening the exchange rate band would have had a positive effect on the current account (also with a lag), though their immediate effect on investors is unclear. Both measures would have dealt at a fundamental level

¹¹ Interview material.

FIGURE 4

Mexico: Stock of net international reserves in 1994
(Millions of dollars)



Source: Banco de México and Buirá, 1996.

(1) Assassination of PRI presidential candidate.

(2) Resignation of Secretario de Gobierno.

(3) Declarations by the Deputy Attorney-General.

(4) Resumption of hostilities by the Zapatista National Liberation Army (EZLN).

with the decline in the willingness of foreign investors to fund the large current account, and with the resulting need to both increase the attractiveness of Mexico for investors and start adjusting the economy to reduce the current account. Several observers (for example Leiderman and Thorne, 1995) believe that such a shift of both monetary and exchange rate policy in the first quarter of 1994 could have avoided much of the crisis. This seems a reasonable assumption, though we will never know for sure.

Basically, the Mexican authorities did not pursue this first option. Though monetary policy was tightened a bit after the Colosio assassination, and interest rates on CETES (government securities) increased from 10.1% on 23 March to 17.8% one month later, there was no further tightening of monetary policy after that, and interest rates on CETES fluctuated between 16 and 18%; indeed, in August interest rates declined and till late November fluctuated in the range of 13 to 15%. Basically, what the Mexican monetary authorities did was to “sterilize” the monetary impact of the outflow of foreign exchange reserves by expanding net domestic credit quite significantly; as a result, the monetary base increased,

even though reserves were falling so rapidly (figure 5). The increase was particularly large following Colosio’s assassination and in the month before the December devaluation and crisis. The reason why the monetary authorities “sterilized” the fall in reserves was that they assumed—wrongly as we now know *ex-post*, and taking a fairly large risk as was evident even at the time from the information then available—that the sharp slowdown in inflows, and the existence of surges of outflows, was only a temporary phenomenon.

Neither was the exchange rate policy modified, even though there was some real devaluation, caused by the fact that as from late March the peso moved very close to the limit of the band, and stayed there till December (figure 6).

The Mexican authorities followed a policy option which involved allowing the foreign exchange reserves to fall (the declines occurred at particular moments—see figure 5—with stable levels in between) and permitting a major switch by non-residents from peso-denominated Treasury Bills (CETES) to dollar-denominated Treasury Bills (TESOBONOS) (table 3). The stock of TESOBONOS rose from US\$ 3.1 billion in March 1994 to US\$ 12.6

TABLE 3

Mexico: Non-resident investments in Mexican Government securities, 1991-1995
(Billions of US dollars)

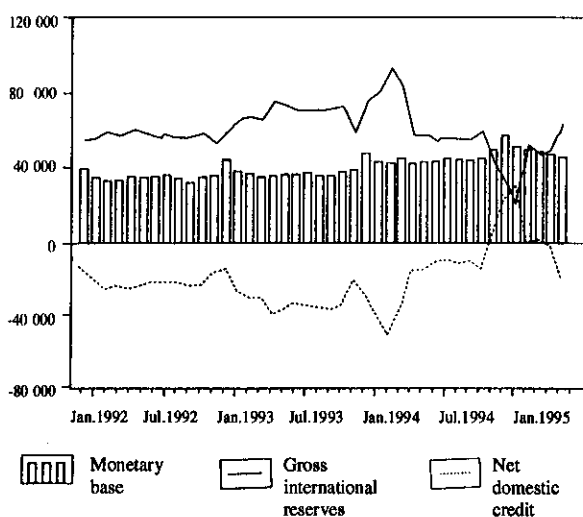
	CETES	AJUSTABONOS	TESOBONOS	BONDES	Total
Net non-resident purchases					
1991	2.3	1.4	0.3	-0.5	3.4
1992	5.6	2.1	-0.1	0.5	8.1
1993	5.6	0.7	1.1	-0.4	7.0
1994	-11.6	-3.9	14.3	-0.9	-1.9
Non-resident holdings ^a					
January 1991	1.4	0.3	-	1.6	3.3
December 1991	3.0	1.5	-	0.7	5.5
December 1992	9.1	3.7	0.2	1.3	14.3
December 1993	15.4	4.4	1.3	0.8	21.9
December 1994	2.5	0.5	17.4	-	20.5
April 1995	3.4	0.4	10.2	0.3	14.3
Percentage of total public holdings					
Non-resident holdings ^a					
January 1991	7.3	7.4	58.9	8.4	8.0
December 1991	21.9	15.9	78.7	4.0	13.1
December 1992	75.8	41.4	58.6	12.4	45.6
December 1993	63.1	53.4	80.3	18.7	56.6
December 1994	60.2	19.1	79.0	5.0	69.3
April 1995	60.8	17.8	90.4	15.4	68.4

Source: Bank of Mexico, and IMF estimates.

^a Change in holdings reflects net purchases of securities, exchange rate revaluation, and the indexation features of AJUSTABONOS and TESOBONOS.

FIGURE 5

Mexico: Central Bank sterilised intervention, 1992-1995
(Millions of new pesos)



Source: Buirá, 1996.

billion in June 1994, rising still further to US\$ 19.2 billion in September and US\$ 29 billion in December 1994 (figure 7). As a result, the composition of government debt held by foreigners was dramatically modified: in December 1993, 70% was in CETES and 6% in TESOBONOS, but by December 1994, only 10% was in CETES while 87% was in TESOBONOS (Lustig, 1995).

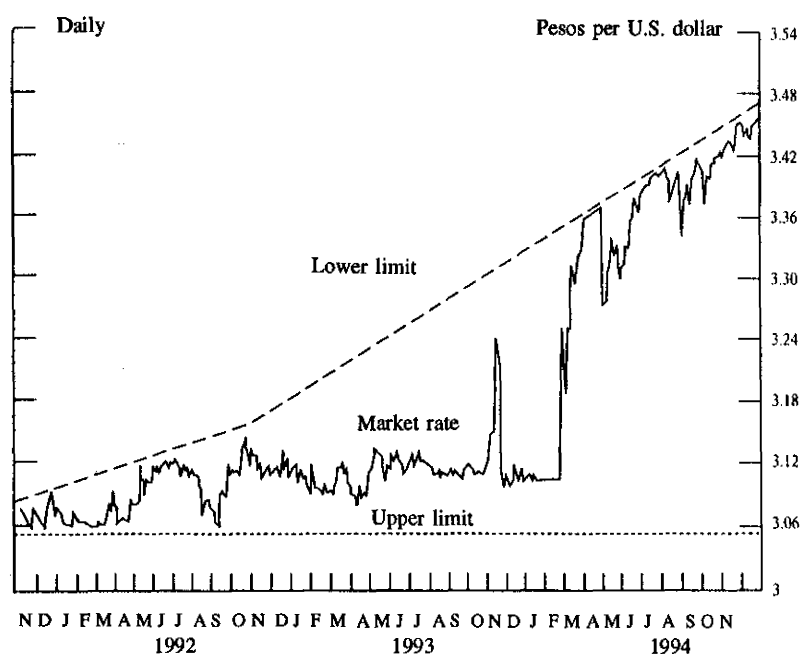
Reportedly, it was institutions like the U.S. mutual funds which were switching from CETES to TESOBONOS; it seems that if Mexican capital was nervous it tended to leave the country rather than switch to TESOBONOS.¹²

This dramatic shift reflected the fact that investors feared the exchange rate was not sustainable, and were therefore willing to stay in Mexico only in dollar-denominated paper: what this really meant was that those investors *had already—at least halfway—left Mexico*. The Mexican authorities “persuaded” them to stay in Mexico by “taking over” the exchange

¹² Interview material.

FIGURE 6

Mexico: Exchange rate changes within the exchange rate band
(November 1991 through mid-December 1994)



Source: Banco de México, *The Mexican Economy*, 1995.

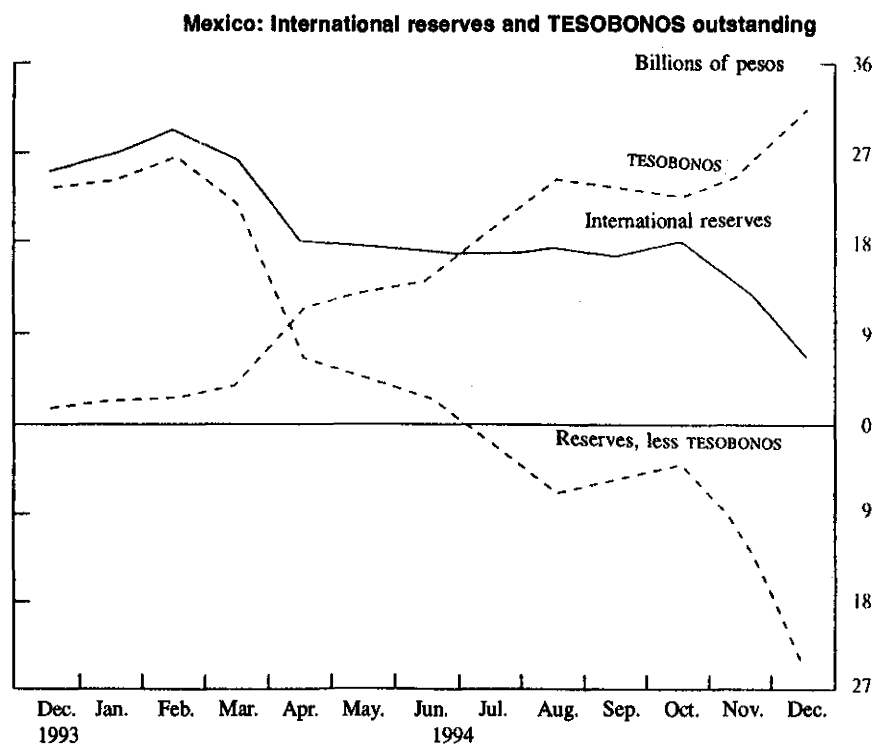
rate risk. By mid-1994 the TESOBONOS combined several disturbing features (their large scale, their ownership by increasingly nervous non-residents, the fact that they were dollar-denominated, and their very short-term nature) which made them something of a potential time bomb for the Mexican authorities. What was also very dangerous, and ultimately proved critical, was the combination of decreasing foreign exchange reserves and short-term dollar-denominated government debt (figure 7). When, as from mid-1994, the stock of TESOBONOS became higher than the total foreign exchange reserves, the situation became particularly delicate, especially because the paper was so short-term. Furthermore, the fact that the debt was dollar-denominated meant that the Mexican authorities could not deflate the value of this debt in case of devaluation, nor could they issue money to service that debt, as it was dollar-denominated. Furthermore, if investors refused to roll over the TESOBONOS, the government could not service them from foreign exchange reserves, because since mid-1994 the stock of reserves was lower than the stock of TESOBONOS, and the gap continued to widen (figure 7).

Another –less widely mentioned– source of financial vulnerability for Mexico was the banks' increased reliance on short-term financing such as certificates of deposit from non-residents. This short-term financing, which already stood at US\$ 19 billion in 1991, rose to US\$ 25 billion by 1994. It is interesting to examine how the capital account and its composition evolved (for details, see table 4).

During the second quarter of 1994 (a period which includes the Colosio assassination and rises in U.S. interest rates), the capital account *deteriorated sharply*, from US\$ 7.7 billion in the first quarter of 1994 (a figure slightly higher than the average for 1993) to US\$ 2 billion in the second quarter. The only category that remained strong was foreign direct investment. This, however, was more than offset by shortfalls in portfolio investments (particularly in equity but also in bonds) and by negative residents' borrowing abroad.

Capital market inflows recovered fairly strongly in the third quarter, as political conditions seemed to stabilize after the Presidential elections of 21 August, but in the October - December period capital inflows again declined drastically. In November, foreigners

FIGURE 7



Source: C. Siegman, 1995, comments on Ariel Buira's paper "The Mexican Crisis of 1994", Forum on Debt and Development (FONDAD), The Hague, Netherlands. Based on data from the Federal Reserve Board.

sold equities and government securities, and in December there was a further pull-back by non-residents from government securities markets.

The Mexican authorities' response to this evolution of the capital account was to assume that the declines in capital inflows and the increased outflows were *temporary*, and were due to *transitory* political uncertainty. Though such an interpretation can be understood, it seems difficult to justify. It ignored John Williamson's (1994) rule that "negative shocks should be treated as permanent, and positive shocks as temporary". In fact, the Mexican authorities seemed to do just the opposite. The key problem was that this implied a very high risk strategy, and this is the main criticism that can be levelled at the approach taken by the Mexican authorities.

In order to avoid such a high risk, the Mexican authorities could have widened the band more and/or accelerated the crawl, they should have significantly tightened monetary policy, and they should have issued far, far fewer TESOBONOS, while in the case of those that they did issue, they should have tried to

place them at longer maturities. In this context, it is worth stressing that they chose to allow the average maturity of "domestic" public debt, which had risen from less than 40 days in 1985 to more than 400 days in 1992, to *fall sharply*, and by the end of 1994 almost 60% of this debt was maturing in less than 12 months.¹³ Longer maturities would have meant higher financial costs, but smaller financial vulnerability. Reportedly,¹⁴ the Mexican authorities *did not even try* to issue more long-term TESOBONOS. It is not completely sure that they would have been able to place significant amounts of such bonds, but if that had been the case (which seems unlikely), then it would have been better not to issue so many TESOBONOS. Indeed, the need to increase the amount of TESOBONOS so much should have been seen as a clear sign of the lack of credibility of the exchange rate policy, in particular, and the overall macro-stance in general.

¹³ Source: IMF.

¹⁴ Interview material.

TABLE 4

Mexico: Quarterly capital account, 1993 - first quarter 1995
(Millions of US dollars)

	1993				1994				1995
	I	II	III	IV	I	II	III	IV	I
Capital account	7 959	7 639	6 955	7 938	7 729	-2 040	7 754	-2 576	-6 253
Official capital	4 678	367	2 648	191	2 730	-474	2 278	-4 933	-1 935
Medium- and long-term borrowing	-98	679	653	367	826	520	-189	290	-1 421
Commercial banks	-343	-607	-256	-776	-230	-280	-7	-209	-307
Multilaterals	-68	2	38	240	-102	-42	-169	147	-231
Bilaterals and suppliers ^a	-233	207	-42	74	-381	-256	-291	-4	-652
Bond placements and others	546	1 077	913	830	1 539	1 098	278	355	-232
Short-term borrowing	1 347	29	-317	4	834	154	984	200	-1 969
Exchange Stabilization Fund	-	-	-	-	-	-	-	-	5 236
Non-resident purchases of Mexican Government treasury bills ^b	3 718	1 227	1 694	374	1 487	35	1 163	-4 627	-4 652
CETES	2 330	-205	2 175	1 304	-60	-5 509	-1 955	-4 063	933
TESOBONOS	-120	-25	515	693	1 732	7 108	4 628	870	-5 578
Others	1 508	1 457	-966	-1 623	-185	-1 564	1 510	-1 434	-7
Other government financial assets	-288	-1 567	618	-555	-417	-1 183	320	-796	872
Long-term trade lending	-119	-274	-4	115	-41	-112	92	20	69
Debt enhancements	-137	-140	-143	-146	-149	-152	-155	-159	-162
Others	-33	-1 154	764	-525	-227	-919	383	-657	965
Private capital	3 281	7 272	4 307	7 748	4 999	-1 566	5 476	2 357	-4 318
Direct investment	1 164	954	550	1 721	1 846	1 618	2 325	2 191	607
Equity investment	1 269	1 312	1 879	6 257	3 466	248	744	-369	119
Bond placements	994	1 865	1 968	1 491	1 486	74	446	55	-1 185
Banking sector	-	325	1 253	160	173	-62	-136	-158	-14
Non-bank private sector	994	1 540	715	1 331	1 313	136	582	213	-1 171
Net external credits	1 943	2 337	536	1 445	3 352	-381	-1 199	645	-1 188
Banking sector	675	2 125	298	330	1 953	-317	-1 278	823	-2 315
Non-bank private sector	1 268	212	238	1 115	1 399	-64	79	-178	1 127
Increase in assets abroad (-)	-482	528	-230	-1 625	-2 695	-632	588	-655	-1 286
Interest earnings held abroad	-204	-170	-166	-192	-199	-287	-323	-380	-407
Others	-278	698	-64	-1 434	-2 496	-345	911	-275	-879
Others including errors and omissions	-1 605	276	-395	-1 541	-2 456	-2 493	2 572	491	-1 385

Source: Banco de México, and IMF estimates.

^a Includes U.S. Government Commodity Credits (CCCs).

^b Short- and medium-term financing provided by the United States and Canada under the North American Framework Agreement (NAFA).

The relatively loose (in the circumstances) monetary policy could have had some political explanation –though no justification– up till the August elections. The puzzle is why monetary policy continued to be loose after the PRI had won a clear victory. If the preference was for maintaining the exchange rate policy, then why was monetary policy not tight-

ened? Reportedly, one of the main reasons was concern over the destabilizing effects of higher interest rates on a rather fragile banking system.¹⁵

¹⁵ Interview material. See also Lustig (1995).

IV

The massive financial crisis explodes

On 20 December, the Mexican authorities widened the intervention limit for the peso by 15%. Because this led to such a massive outflow of funds (during December 20 and 21, Mexico's foreign exchange reserves fell by over US\$ 4 billion, bringing them to quite a low level), the peso was then allowed to float.

Even though the action taken by the Mexican authorities on 20 December was what many observers had said was necessary (a devaluation of around 20%), this decision precipitated an incredibly large financial and balance of payments crisis for the country, with strong ripple effects not just in Latin America, but throughout the developing world and even in some of the weaker developed economies.

Though the Mexican authorities had made mistakes in the conduct of macroeconomic policy and in the pace of liberalization (see above), and though the devaluation itself (see below) could have been both better timed and better handled, the reaction of the financial markets to the devaluation – which in itself was a correct policy move – was both absolutely brutal and extremely unexpected. From practically one day to the next, the markets' perception of Mexico changed dramatically from "model economy" to "traitor of foreign investors", even though the economic fundamentals had not changed at that point, nor had there even been an important further deterioration in the political fundamentals. For this reason, a full understanding of the Mexican peso crisis cannot merely (or perhaps even mainly) emphasize the policy mistakes of the Mexican authorities: it needs to focus also on the imperfections of international capital markets. Before exploring these markets more fully, we will analyse how the devaluation was handled and briefly outline the impact on the balance of payments.

Having said that the initial devaluation was actually in many ways an appropriate response to a very large current account deficit, which could no longer be financed by large capital flows, then how was the devaluation mishandled?

Firstly, it can be argued that *it was carried out too late*. The widening of the band was only announced when reserves had fallen to US\$ 10 billion.

If it had been done earlier (either from a position of strength, for example in late February 1994, when the reserves stood at US\$ 29 billion, or after the murder of Colosio, when the reserves fell systematically to US\$ 17 billion by mid-April, or in August, when they had increased from a previous low to US\$ 16 billion), the authorities would have been in a stronger position to defend the currency. Furthermore, if the devaluation had been carried out earlier, there would have been no overhang of maturing TESOBONOS, or at least it would have been smaller, and therefore the difference between reserves and TESOBONOS would have been either positive or only mildly negative (figure 7).

Secondly (though once again this is clearer with the benefit of hindsight), several mistakes were made in the way the devaluation was handled. These are called "the errors of December" in Mexico, where many analysts attribute great importance to the "mishandling" of the devaluation.¹⁶ However, the importance of this "mishandling" should not be exaggerated. Furthermore, these "mistakes" are far more obvious with the benefit of hindsight, and with the knowledge of the dramatic scale that the crisis was to assume.

Among the possible mistakes in the way the widening of the band was handled are the following: a) perhaps most importantly, the measure was announced in something of a policy vacuum; there was no simultaneous announcement of a broader adjustment package (which could have included, for example, tightening of monetary policy), nor was a programme of further privatizations announced. Both of these measures would have reassured investors. In defence of the Mexican authorities, it should be noted that agreements between business and labour leaders in Mexico to restrain wage and price increases were announced at the same time as the devaluation, but this was not enough to satisfy the markets; b) the moving of the band was not linked to

¹⁶ Interview material.

a loan agreement with the IMF: once again, such a loan agreement could have helped to reassure investors, especially foreign ones. To be fair to the Mexican authorities, it should be mentioned that, simultaneously with the devaluation, the activation of a US\$ 7 billion swap line with Canada and the U.S. was announced, as an important line of defence, and it was only because the crisis was so big that this swap line became insufficient; c) the devaluation was first discussed in a long meeting within the "Pacto" (the Pact of Economic Solidarity). The "Pacto" is a forum of representatives of the government, the business sector, workers and agricultural producers, used for agreeing macroeconomic policy, including an incomes policy which covers wages, prices and the exchange rate. Though the Pacto is a valuable instrument for achieving consensus on Mexican economic policy, discussing a specific change in exchange rate policy in a situation of rapidly falling reserves in such a forum seemed inappropriate for two reasons. Firstly, it is considered to be best for the Governor of the Central Bank to take such a decision with the agreement only of the Finance Minister, so as to avoid the spread of rumours which can destabilize financial markets. Secondly, in the specific case of the Mexican devaluation, there are unverified reports that some of the business representatives participating in the meetings themselves immediately used the information of a forthcoming devaluation to buy dollars. This not only increased pressure on the peso, but also reports of it angered foreign investors, who argued that they did not have access to this "inside information"; reportedly, this accelerated their withdrawal of dollars;¹⁷ d) the measure was implemented by a new Finance Minister who had not had time, and not devoted enough efforts, to establish close links with the foreign investor community as the previous Finance Minister had; e) it was decided merely to widen the band; it was only when the band was attacked so strongly that the decision was taken to float the peso. Several analysts argue that it would have been better to have shifted immediately to a float, as the Banco de México had proposed but the Pacto had rejected;¹⁸ f) the decision was taken very near Christmas, when markets tend to be very thin, and g) the decision to devalue was announced on a Tuesday, which left the markets the possibility of attacking during the rest of the week; usually devaluations are announced late on Friday.

¹⁷ Interview material.

¹⁸ Interview material.

However, the significance of the "errors of December" should not be exaggerated, as the more structural features of the situation surely played a dominant role. Nevertheless, understanding these errors may offer useful lessons for other countries which may face similar situations in the future.

After the 15% devaluation, and even more after the floating of the peso, investors rushed for the "exit" with the incredible speed of a stampede. As mentioned above, US\$ 4.5 billion of reserves were lost between 20 and 22 December; reportedly much of this was money belonging to Mexican residents.¹⁹ However, the flight was increasingly joined by panicking foreign investors. The dollar value of foreign investment in the Mexican Stock Exchange fell dramatically, from US\$ 50 billion in November 1994 to US\$ 18 billion in February 1995; however, the share of foreign investment in that stock exchange fell by only around 1% in that period (from 25.7% in November 1994 to 24.5% in February 1995) (table 5). The explanation for this is that the total value of the Mexican Stock Exchange fell sharply in U.S. dollar terms, but this was mainly due to the falling peso, plus some decline in stock prices.

However, the main impact of capital flows on the crisis was through the TESOBONOS and also, to a lesser extent, via the banking system. Towards the end of December, investors (and especially foreign ones, who held the majority of TESOBONOS) became increasingly concerned about the amount of TESOBONOS that would mature in the first few months of 1995. There was suddenly strong focus on the fact that a total of US\$ 9.9 billion was expected to mature in the first quarter, while the foreign exchange reserves had fallen to US\$ 6.3 billion at the end of December 1994, and there was widespread panic that the Mexican government might be forced by events to default on its obligations. As a result of these fears, three weekly auctions of TESOBONOS starting on 27 December 1994 fell far short of selling the amount of TESOBONOS offered. Bid-cover ratios (the ratio of the amount bid to the amount offered) *bottomed at a disastrous 5%* on 27 December 1994, when US\$ 600 million in TESOBONOS were offered, and bids for only US\$ 28 million were received! Though demand for CETES was a bit higher, bids at several CETES auctions also fell short of the amount offered.

¹⁹ Interview material.

TABLE 5

Mexican Stock Exchange (BMV), 1989-1995

Year/month	Market value		Foreign investment		Share of foreigners	CPI	
	Amount (Millions of US\$)	Variation (%)	Amount (Millions of US\$)	Variation (%)	(% of BMV)	Points	Variation (%)
December 1989	26 562.71	-	808	-	3.04	418.93	-
December 1990	40 939.86	54.13	4079.45	404.88	9.96	628.79	50.10
December 1991	101 718.65	13.59	18 542.51	9.07	18.23	1 431.46	3.42
December 1992	138 749.07	4.68	28 668.00	3.66	20.66	1 759.44	2.55
December 1993	200 613.34	18.70	54 623.05	26.97	27.23	2 602.63	17.46
January 1994	215 383.00	7.36	60 924.55	11.52	28.29	2 781.37	6.87
February 1994	202 646.12	(5.91)	56 166.82	(7.81)	27.72	2 585.44	(7.04)
March 1994	186 301.92	(8.07)	50 296.03	(10.45)	27.00	2 410.38	(6.77)
April 1994	181 114.11	(2.78)	48 328.32	(3.91)	26.68	2 294.10	(4.82)
May 1994	188 229.96	3.93	51 032.43	7.17	27.52	2 483.73	8.27
June 1994	174 633.22	(7.22)	46 445.26	(10.32)	26.60	2 262.58	(8.90)
July 1994	184 371.77	5.58	51 032.43	9.88	27.68	2 462.27	8.83
August 1994	202 574.72	9.87	55 394.16	8.55	27.35	2 702.73	9.77
September 1994	204 480.98	0.94	55 913.07	0.94	27.34	2 746.11	1.61
October 1994	195 429.07	(4.43)	50 747.94	(9.24)	25.97	2 552.08	(7.07)
November 1994	195 838.05	0.21	50 393.06	(0.70)	25.73	2 591.34	1.54
December 1994	129 850.36	(33.70)	34 395.16	(31.75)	26.49	2 375.66	(8.32)
January 1995	88 124.25	(32.13)	22 973.06	(33.21)	26.07	2 093.98	(11.86)
February 1995	77 300.67	(12.28)	18 946.20	(17.53)	24.51	1 549.84	(25.99)
March 1995	74 349.02	(3.82)	19 935.00	5.22	26.81	1 832.83	18.26
April 1995	90 499.83	21.72	23 125.15	16.00	25.55	1 960.55	6.97
May 1995	82 747.61	(8.57)	21 952.44	(5.07)	26.53	1 945.13	(0.79)
June 1995	93 471.87	12.96	23 844.27	8.62	25.51	2 196.08	12.90
July 1995	106 265.19	13.69	26 826.11	12.51	25.24	2 375.17	8.15
August 1995	106 508.83	0.23	27 179.39	1.32	25.52	2 516.99	5.97
September 1995	100 885.73	13.69	25 165.44	(7.41)	24.94	2 392.26	(4.96)

Source: Bolsa Mexicana de Valores / Dirección de Información y Estadística. I thank Mr. Víctor Rojas for providing this information.

The unwillingness of (mainly foreign) investors to buy TESOBONOS greatly accentuated the crisis, as their fears became potentially self-fulfilling. It was only the massive U.S. Treasury - IMF package agreed in late January 1995 that stopped the risk of a potential default.

At all events, the total of investment in all Mexican government securities (including TESOBONOS, CETES, AJUSTABONOS and BONDES) fell from US\$ 21 billion in December 1994, to US\$ 14 billion in April 1995 and to US\$ 7 billion in September 1995; almost the whole of this decline was explained by the sharp fall in foreign investors' holdings of TESOBONOS, which fell from their December 1994 peak of US\$ 17.8 billion to only US\$ 1.8 billion in late September 1995.²⁰

There was another source of potential vulnerability which is hardly mentioned in the literature, but which also played an important role in the crisis (though less important than the TESOBONOS).²¹ In January 1995, the Mexican banks faced severe dollar liquidity problems, as they faced difficulties in rolling over foreign currency-denominated certificates of deposit (CD's) and other short-term lines of external credit, due to the higher country risk perceived by foreign lenders, accentuated by the fact that many of these loans were using TESOBONOS as collateral.

During the first quarter of 1995, the weakness of capital flows intensified and became generalized to different categories. We have already discussed the problems of renewing TESOBONOS and the difficulties faced by the commercial banks. In addition, State agencies and companies faced difficulties in rolling

²⁰ See table 3, and data prepared by the Bolsa Mexicana de Valores.

²¹ Interview material.

over short-term lines of credit and the non-bank private sector faced bond payments that could not be rolled over (table 4). During the first quarter of 1995, net capital outflows (excluding the special loans provided through the IMF and the U.S. Treasury as part of the massive rescue package for Mexico) totalled US\$ 11.5 billion, compared to average quarterly *inflows* of US\$ 7.6 billion during 1993, and around US\$ 2.5 billion in 1994.

The speed and scale of the response of international capital markets to the December devaluation cannot be fully explained by a sharp deterioration of economic (and even political) fundamentals (since this did not occur in December 1994) nor by the increase in financial vulnerability (e.g., the TESOBONO to reserves ratio), though all these factors played important roles. However, a further important factor in explaining the magnitude and speed with which international markets reacted is the existence of certain imperfections in these markets, which made them *overreact* to the devaluation.

Kindleberger (1978) has developed an approach which considers financial crises as a response to previous excesses linked to "euphoria". In the case of Mexico, the "euphoria" was linked to the country's image as a "model reformer", as well as its access to NAFTA and OECD. As in Kindleberger's model, monetary and credit policy in Mexico played a role in exacerbating the boom, but the behaviour observed was also conditioned by dramatic changes in perceptions. Kindleberger also shows –both through theoretical analysis and by drawing on historical experience– that in a crisis or panic situation credit may become unavailable at any price. In such circumstances (which illustrate what happened in Mexico in late December 1994 and early 1995), markets are cleared by rationing; indeed, when panic is severe, as occurred in Mexico, obtaining funds (via borrowing or other mechanisms) may become quite impossible.

Shafer (1986) further develops the relevant theoretical analysis of financial crises by emphasizing the role of uncertainty. The role of uncertainty is particularly great in a context of financial innovation, when the behaviour of new instruments or mechanisms has not yet been well tested. It can be argued that instruments such as emerging markets' mutual funds were both fairly new and not appropriately regulated. Theory shows that negative surprises –in a context of uncertainty– can provoke shifts of con-

fidence, and therefore runs, *that affect markets more than appears warranted by the intrinsic significance of the event*. Because of the relatively high cost of in-depth information on countries, it may become rational for investors to react very negatively (and exit) in response to even minor bad news, even if the news does not refer to any important change in economic fundamentals. As a result, a relatively small devaluation in December 1994 led to a major speculative attack on the Mexican peso. This experience leads to the conclusion that investment behaviour in such an internationalized global economy can have highly problematic effects on individual countries, as "small news" or even rumours can provoke massive capital outflows.

In the case of some specific instruments, there were special reasons for rapid withdrawal. For example, the Mexican devaluation caused emerging market mutual funds to pull out of Mexico for two reasons. Firstly, the funds got smaller because of redemptions (or were expected to get smaller due to future likely redemptions). Secondly and more importantly, the share which the smaller funds wished to hold in Mexican paper also fell.²² Some mutual funds operate almost like banks, guaranteeing, as a minimum, to return 100% of the initial deposit to their investors.²³ As a result, they need to avoid important losses and/or volatile markets. These types of funds pulled out of Mexico very quickly when the crisis started.

Finally, "disaster myopia" reportedly played a big role in investors' behaviour. The fact that there was so much (unjustified) faith that there would be no devaluation also helps to explain why there was so much over-reaction to the devaluation when it did occur. Such "disaster myopia", and later over-reaction, seems to have been accentuated by the sheer inexperience and great youth of many of the people both analysing and deciding on investment in Mexico and Latin America in the early 1990s: the fact that many would not have been adults when the 1982 debt crisis occurred may mean that they had little knowledge of the region's history of capital flows and balance of payments crises (Galant, 1995).

(Original: English).

²² Interview material.

²³ Interview material.

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Recent ECLAC publications

Descentralización fiscal en América Latina. Balance y principales desafíos (Fiscal decentralization in Latin America: The current situation and the main challenges), LC/L.948, ECLAC/GTZ Regional Project on Fiscal Decentralization, ECLAC, Santiago, Chile, July 1996, 259 pages.

The central hypothesis of this book is that the geographical proximity of authorities and the communities they serve leads to better response capacity and more open procedures in the local provision of goods and services, as well as providing clear incentives for the introduction of innovations in local fiscal management and a more responsible attitude of the population at the political level. While the main economic argument in favour of fiscal decentralization is that it promotes efficient resource allocation, it must be acknowledged that it also raises serious challenges and problems because of the possible effects of greater decentralization on the attainment of the national goals of distributive and macro-economic policies. Consequently, in appraising the advantages and disadvantages of the process it is necessary to adopt broad criteria which permit these factors to be taken into account.

In Latin America, fiscal decentralization is a relatively recent process. A number of countries are still at the initial stage of embarking on this process, but others have already made some progress in this field, with various different priorities and great difficulties which are already being reflected in the costs and benefits of transition to a management model which takes account of the territorial heterogeneity of their societies.

Because of the historical setting in which decentralization takes place, it is desirable to make a comparative study and establish goals that are feasible in the medium term. The communities which are interested in decentralizing are naturally eager for new ideas and are calling on their respective national governments to apply management criteria in keeping with the new institutional order and to display better coordination in terms of the transfer of resources and outlays, a clearer definition of the role of the public sector institutions, and greater responsibility and more open procedures in the management of the available resources.

This book incorporates case studies carried out by consultants in Latin American countries with federal or unitary systems of government, on the basis of a common theoretical referent and broad criteria. Part I, which was prepared by Gabriel Aghón, principal expert of the project, seeks to give a balanced picture of main theoretical lines and practical aspects of the progress made in this field by a number of countries of the region. An analysis is made of the salient concepts on which the principles of fiscal federalism are based, with special attention to the elements which help to understand the current process of decentralization in Latin America, and finally some brief observations are offered on the main challenges and lessons connected with the adoption of policies in this field that may be drawn from a comparative analysis of the cases studied.

In Part II, Professor Gerold Krause-Junk of the University of Hamburg raises the question of the reasons for the desire for greater decentralization and the preponderance of individualism. He also offers some reflections on the Latin American countries selected for study under the project, from an international stand-

point based on an analysis of what has been done in some industrialized countries.

Part III includes summaries of the national case studies prepared by the consultants, which, guided by common research procedures, give an overview of the special features of the various national processes. Finally, an extensive updated bibliography is provided for those interested in going more deeply into the question.

In the studies, particular importance is assigned to the dilemma between equity and efficiency in relations among government fiscal bodies, especially as regards the definition of both optimum systems of tax collection at the sub-national level and suitable forms of transfer. Since the process is based fundamentally on sharing in the transfers, decentralization is more prominently visible in the case of expenditures than in that of income, and this has given rise to a sometimes hazy division between deconcentration of the public administration and fiscal decentralization.

An area of special interest in this respect is the relation between macroeconomic stability and fiscal decentralization, in which the process under analysis assumes special importance because of the greater access of regional and local governments to sources of financing which, apart from government transfers, include indebtedness and other sources of funding which can affect the size of the consolidated public sector deficit. Some working hypotheses are formulated in this respect, which it will be sought to verify later on.

The wide variety of different cases of decentralization makes it difficult to typify the process in Latin America and explains the lack of consensus on the methods that should be used for measuring the effective degree of decentralization through internationally comparable indicators other than those traditionally used, with the limitations typical of current sub-national fiscal statistics. In this respect, there can be no doubt that the statistical information collected and processed under the project represents a valuable input for future discussion and research in this field.

The expectations aroused by the fiscal decentralization process are due basically to the stimulus that this can give to the spirit of innovation of sub-national governments and the chance it gives them to learn from and take advantage of the experience of those already at a more advanced stage. This is why the countries are increasingly interested in knowing about successful efforts in this field and attempts to apply new systems of coordination and relations among the different levels of government and between these levels and the private sector. Particularly important in this respect are the innovations and improved practices that may be promoted by this process, ranging from incentives for local fiscal management and modernization of sub-national tax systems, possibilities for generating new local resources, and more open and efficient procedures for decentralized spending in some departments, to revision of the actual forms of transfers among government bodies, all prompted by the desire to achieve greater equity and efficiency in the allocation and use of public resources.

Although the decentralization process is relatively recent, especially as the subject of an exhaustive appraisal, there are risks and limitations which stand in the way of the implementation of more far-reaching reforms in this field, so that it is necessary to envisage making the necessary adjustments and strengthening intermediate and local institutions in order to deal satisfactorily with some critical areas of more fully decentralized public administration. In many cases, the slowness of the process and other grounds for criticism are due to the lack of clear rules and strategies or action plans providing for better allocation of areas of competence and resources.

Inversión en la infancia: evidencias y argumentos para políticas efectivas (Investment in children: evidence and arguments for effective policies), LC/L.956, Guillermo Labarca, ECLAC, Santiago, Chile, June 1996, 110 pages.

This study identifies the most salient items of the body of problems affecting children in Latin America and the Caribbean in the areas of education, stimulation, health and nutrition. These are: i) the need for an increase and better distribution of the State contribution; ii) the mobilization of new private resources; iii) more efficient use of the present expenditure, and iv) coordination of the available resources.

The experience accumulated in the region on these items provides a basis for the suggestion and support of appropriate lines of action and coherent and integrated policies, although the latter objective raises some challenges, the most important of which are to identify the most effective techniques or sets of techniques for such intervention, to carry out more timely action, and to identify the most efficient institutions.

The problem of expenditure on children is approached in this context in terms of: i) extra spending on children as a long-term investment; ii) saving of resources; iii) investment in children as a condition and multiplying factor for the impact of investments in other sectors; iv) the derived consequences of not investing in children, and v) the returns on investment in children, compared with those on investment in other sectors.

The main conclusions of this study are the following: i) public spending on school education is low in Latin America and the Caribbean, while in the area of health the resources are insufficient and do not appear to be well allocated; ii) expenditure on primary and pre-primary education is an investment that gives excellent returns; iii) in the area of health, preventive action gives better returns than curative activities; iv) expanding pre-school education would help to reduce repetition of grades and lags in schooling; v) there is a close association between the number of years of schooling of workers and the greater or lesser productivity of the work they do; vi) the educational climate of the home is closely related to family members' school performance and the level they occupy in the labour force; vii) the educational techniques currently in use in the region are ineffective; viii) lack of early stimulation in the cognitive, motivational and affective fields is reflected in poor school performance, lack of integration into society, and lack of motivation and interest in what society has to offer; ix) early stimulation can be improved through specific action for each age group, at costs which are inversely proportional to the children's age; x) children's physical and intellectual development is closely linked to their nutritional level in the early years of life; xi) there are macroeconomic, social assistance-oriented, medical and educational strategies for improving children's nutritional state, and xii) general improvement in the economy does not automatically lead to improvements in the levels of nutrition and health.

Centroamérica y el TLC: efectos inmediatos e implicaciones futuras (Central America and NAFTA: immediate effects and future implications), LC/G.1894-P, "Cuadernos de la CEPAL" series, No. 78. United Nations publication, Sales No. S.96.II.G.5, Santiago, Chile, May 1996, 164 pages.

The North American Free Trade Agreement (NAFTA), like any integration agreement, has implications both for its member countries and for those that are not members. The external economic relations of the Central American countries could be decisively

affected by the participation in that Agreement of the United States, which is their main trading partner and the main source of foreign investment in the subregion. The possibility of diversion of Central American exports previously aimed at the United States market, as well as of foreign investments which might otherwise have been made in the subregion, has given rise to intensive debate about whether it would be better to seek accession to NAFTA or, alternatively, to opt for compensatory measures designed to reduce the potential costs of this treaty for the Central American countries.

This document seeks to make a contribution to that debate. It begins, in the first two chapters, by analysing the immediate effects of NAFTA, after which it focuses on the medium and long term in the last two chapters. Chapter I deals with the changes in the legislation of the member countries, the judicial questions arising from the entry into force of the Agreement, and some obstacles encountered by the trade liberalization process. In general, it notes the wide coverage and great depth of the integration process set afoot by NAFTA.

Chapter II contains an empirical preliminary appraisal of what has happened to trade flows during the first nine months of operation of the treaty. In particular, it analyses NAFTA's possible effect on Central American exports to the United States at a disaggregated level, illustrating its most important conclusions with specific cases. This analysis, effected with a strict methodology which is described in Annex I, represents one of the first appraisals of the immediate and *ex post* effects of NAFTA on third countries. These results are compared with the *ex ante* studies made on the basis of theoretical models, especially those based on computable general equilibrium.

After analysing the immediate impact of NAFTA on Central America, its medium- and long-term implications are considered in the light of the need to define economic policy guidelines, especially for trade. Thus, in chapter III an evaluation is made of two options open to the Central American countries: seeking to obtain countervailing benefits, or concentrating on accession to NAFTA. After a comparative analysis of the advantages and disadvantages of both possibilities, the key issues that the Central American countries need to negotiate with the United States are examined. On this basis, a negotiating agenda and medium-term policy recommendations are proposed, including a number of the issues that need to be dealt with if the strategic decision is taken to seek NAFTA membership for the Central American countries.

From this standpoint, the last chapter identifies the lessons to be drawn from various past cases of negotiation and access to integration agreements. The conditions of accession to the various agreements are dealt with, with special attention to the different forms of transitional processes. On this basis, some conclusions are drawn which could serve as guidelines for the Central American countries' long-term strategy on international economic linkages and trade negotiations.

Preparing for integration with North America is also equivalent to adopting a long-term development strategy. It calls for progress in the stabilization of the Central American economies, negotiation of a broad but gradual process of liberalization of imports of goods, and careful definition of the criteria for negotiations on the liberalization of services, where the experience of other accession processes suggests that there is more bargaining room. It also calls for broadening of the negotiations on labour matters to include the question of financial aid to ease the process of adjustment and social development, taking the commitments assumed in the Uruguay Round and other multilateral agreements as an "anchor" for the negotiations on the set of rules that will govern trade.

When integration is effected between economies of different sizes and there is already a non-reciprocal preference agreement favouring the less developed nation, the transitional processes will be largely connected with the degree of tariff openness of the latter country's market. In this context, if the Central American countries join NAFTA or become part of a Free Trade Area of the Americas it would not be realistic to expect non-reciprocal special treatment. However, there is still the possibility of seeking adequate transitional periods and extra finance to ease the adjustment process.

Crecimiento de la población y desarrollo económico (Population growth and economic development), LC/G.1878-P, "Cuadernos de la CEPAL" series, No. 75. United Nations publication, Sales No. S.96.II.G.4, Santiago, Chile, April 1996, 95 pages.

This study analyses three aspects of the relationship between population growth and economic development: the known facts, theories and policies. Special attention is devoted to the theories and ideas which have been emerging in this field in the last decade.

Part I concerns the current debate on population and economic development, the tone of which has been changing in recent years. It is noted that the great ideologies play an ever-smaller role in the population debate, and the multidimensional nature of the relationship between population and economic dynamics is stressed. Finally, mention is made of the growing recognition of the importance of value-related aspects in the debate on population.

Part II looks at various theories developed in recent decades which had considerable influence in the 1980s, noting not only their elements of value but also their many weak points. Among the theories analysed are those currently in vogue which stress the positive aspects of population growth and large populations, as well as the theory that population growth favours the spread of innovations involving intensive use of labour in the agricultural sector. Special reference is made to the economic consequences of population ageing and the repercussions of population-oriented theories in terms of policies.

Finally, part III explores various possibilities for combining population growth and economic and social progress by giving priority to the promotion of production in a context of social equity. A particular effort is made to show that in every such combination it is necessary to take account of three perspectives—interrelated and united by a common element—which form the indispensable frame of reference for proper study of population dynamics and economic growth. These are the perspective of investment in human capital, the perspective of demographic equity, and the ecological perspective. The common element shared by all three—as far as the relation between demographic and economic aspects is concerned—is that all of them must lead

to changing production patterns with social equity in a democratic context.

Desafíos de la descentralización. Educación y salud en Argentina y Chile (The challenges of decentralization. Education and health in Argentina and Chile), LC/L.950, Ricardo Carciofi (coordinator), Oscar Cetrángolo and Osvaldo Larrafiaga, ECLAC, Santiago, Chile, April 1996, 167 pages.

Much emphasis has been placed in recent years on the need to increase the effectiveness and equity of social services and programmes. One of the items which has aroused most interest in this context is the decentralization process. As well as being attractive from a number of points of view, however, decentralization raises substantial queries in economic and fiscal terms. At what level of government should decisions be taken and resources provided? Should the central government participate in the financing of social services? Is there a danger that decentralization may result in the provision of services whose quality varies widely from one area to another?

This study seeks to give answers to these questions on the basis of two specific cases: Argentina and Chile. From the possible points of comparison between these two cases, whose national conditions are very different, it may be concluded that there is no single, universal model for the decentralization of social services, which is a process that does not take place in a vacuum. However, the use of suitable fiscal instruments can provide the whole population with more equitable access to education and health services.

Decentralization may be seen as a new way of distributing responsibilities among the various levels of government. Understood in this way, it is an institutional and political process. It also has clear implications for the organization and allocation of fiscal resources. It is a means of bringing public services closer to their direct beneficiaries and thus also promoting the population's participation in the orientation and control of public spending. However, decentralization processes give clear indications of their own limits. For effective participation by the population in local government matters, suitable conditions and the right institutional framework are required. With regard to the provision of education and health services, national policies clearly cannot wash their hands of the results obtained. Even though these social services may be transferred to the local level, they still have vital significance for the social cohesion of the country.

Likewise, at the economic and fiscal level, an explicit concern for equity means that the regions cannot be simply left to their own resources. Mechanisms are needed for the transfer of fiscal revenue from rich to poor regions, provided of course that this redistribution is subject to the macroeconomic limits of the national budget.

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