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FOR LATIN AMERICA AND
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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.

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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.

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—Special attention should be paid to the bibliography, which should not be excessively long. All the necessary information must be correctly stated in each case (name of the author or authors, complete title (including any subtitle), publisher, city, month and year of publication and, in the case of a series, the title and corresponding volume number or part, etc.).

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CONTENTS

Social stratification *under tension in a* globalized era

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The objective of this paper is to explore the effects of globalization on the labour market and social stratification. It is generally held that globalization will bring about progress for nations and people. This, however, is far from clear, since the experience of almost two decades has been raising increasing doubts about the potential net gains and, particularly, the distribution of such gains. Clearly, there are winners and losers among both countries and people. We will concentrate on the effects upon people within countries and refer only to one region: Latin America. Our aim is to identify winners and losers in the globalization process and, particularly, the impact on social stratification. Is globalization leading towards greater social integration within nations, or is social disintegration the result (because only some groups are being integrated, while a majority is progressively excluded)? To analyse this issue, the paper is structured into four parts. The first looks at globalization as an integral part of a policy compact, since it is necessary to consider the impact of the whole package rather than trying to isolate partial effects. The second concentrates on the effects on employment, incomes and equity. The third explores changes in the social structure associated with some of the main processes accompanying globalization. Lastly, we draw some conclusions about the social structure of Latin America during the reform period.

I

Globalization as part of a policy compact

Globalization in a restricted sense refers to major changes in trade, finance and information that have taken place in the international economy. This process has not happened in isolation, but as an integral part of a policy package combining internal adjustment measures with changes in the way countries relate to the international economy. Three main processes characterize the emerging situation: *globalization, privatization* and *deregulation* (Tokman, 1997). The policy compact followed by most countries, at least in Latin America, came to be known after 1989 as the "Washington Consensus" (Williamson, 1990).

Globalization means that national economies are now more integrated with the international economy and that goods, capital and communications, and also people, are closer together today than ever before in the past. This has been the result both of the opening up of economies and of rapid technological change. Trade and financial liberalization has come about through reductions in tariff and non-tariff barriers resulting from i) multilateral agreements in the General Agreement on Tariffs and Trade (GATT) and the creation of its successor, the World Trade Organization (WTO); ii) new or reactivated integration schemes, such as the North American Free Trade Agreement (NAFTA) and the South American free trade association known as Mercosur; iii) an explosion of bilateral trade agreements during recent years; and, most importantly, iv) unilateral tariff reductions as a key component of the adjustment policy package. Latin American tariffs decreased from an average of between 35% and 100% (minimum and maximum rates) in 1985 to between 14% and 22% in the early 1990s. Diversification of the tariff structure has also been greatly reduced, and is now limited in most countries to three or fewer tariff categories (Tokman, 1999).

Globalization opens up new opportunities for growth and job creation, but at the same time affects the determinants of employment and wages and requires regulation to prevent unfair international competition. For example, given the differences in factor endowment, it is expected that trade from developing to developed countries will largely consist of goods whose production involves intensive use of unskilled labour. This could increase the demand for workers of this type and decrease the gap between the wages of skilled and unskilled labour.

If this came about, though, it could combine with the differences in remuneration and labour regulations that obtain between countries to generate trade expansion based on unfair labour practices or increased exploitation of workers. The prospect has sparked an international discussion about how this outcome can be avoided and whether there is a need for additional regulation. While there has been no general agreement on how to proceed, it is clear that nobody postulates the equalization of wages between countries, since this would affect the competitive position of developing countries. Nor is it accepted that trade expansion should be based on labour exploitation. Trade sanctions for those who do not comply with minimum international labour standards have been mooted, but so far the idea has been ruled out because of the danger of their being misused as an instrument of trade protection. There is, however, more general agreement about the need for national and international monitoring to ascertain whether economic progress is being accompanied by social progress and, particularly, by compliance with basic labour standards among all trading partners. This has been incorporated into the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work and its Follow-up, adopted by the International Labour Conference on 18 June 1998.

Globalization also affects the determinants of job creation and wages because in open economies the ability to compete becomes a major factor and places constraints on wage adjustments. There now has to be a closer link between wages and productivity than there was in the old economic environment. In closed economies, wage increases in excess of productivity growth can be transferred to prices, resulting in inflation; in open economies, the outcome is a reduced capacity to

☐ A preliminary version of this paper was prepared at the request of UNDP as a contribution to the *Human Development Report, 1999*.

compete. In addition, demand fluctuations mean that companies have to be able to adapt faster and show greater flexibility in production and labour processes.

Privatization is the second feature of the new economic environment. Privatization reduces the size and functions of government and increases the importance of the private sector and markets in the management and allocation of resources. Public-sector employment naturally falls, rationalization by the new owners reduces total employment and public-sector enterprises are transferred to national or international capitalists, the main motive being the need to reduce budget deficits during adjustment. Increasingly, furthermore, responsibility for investment is transferred to the private sector and public investment is limited to basic infrastructure and social sectors, with growing private-sector involvement in the execution and management of these.

Deregulation is the third process in this new environment. This has meant reducing protection and government intervention in trade, finance and labour markets. As was mentioned earlier, trade and financial liberalization are leading to increased globalization, while product and labour market protection is being reduced in order to increase economic efficiency and enable markets to play a greater role in the allocation of resources. The deregulation process has in part been driven by substantial legal reforms, but there has also been a considerable de facto increase in flexibility brought about by the unfettered operation of markets.

The threefold process of *globalization, privatization* and *deregulation* is occurring in an international environment characterized by "universalization" of economic and social problems and by increased ideological homogeneity. Today, employment problems and social exclusion are no longer to be found solely in developing countries, but constitute a major challenge even in the more developed economies of the world. Unemployment in some of the industrialized countries of the Organisation for Economic Co-operation and Development (OECD) is stubbornly high; more than 30 million people are officially classified as unemployed, while a further 10 million are no longer actively seeking work (OECD, 1994 and ILO, 1996). The average rate of unemployment exceeds 10% and in the case of some vulnerable groups, like young people, one in five is jobless in many countries. The end of the Cold War broke down ideological barriers, and today's conflicts are caused less by ideological divergence and more by local interests or by a natural reaction against the social cost of adjustment.

The three processes are interrelated in both practical and analytical terms. On the analytical side, globalization could not have advanced had it not been accompanied by the other components of adjustment that reduced trade protection, as well as by financial liberalization and privatization with all the opportunities these opened up for increased trade, capital flows and foreign direct investment. All these policies contributed to the attainment of macroeconomic balance, but they were also necessary conditions for integration into the world economy. These sets of policies were fully incorporated into the Washington Consensus, together with instruments designed to help secure fiscal discipline. The latter were included with the main objective of ensuring price stability, but they also play an important role in creating incentives for capital inflows in a framework of greater stability. Indeed, the one thing that has not been liberalized is the movement of unskilled workers. Some retrospective policies regularizing illegal migration have been introduced, but closed borders, or at least tight regulation of flows, continue to be the rule.

The recent economic history of Latin American countries shows that, in practice, globalization has been accompanied by privatization and deregulation. The timing and policy mix has varied according to country and it is perhaps premature to evaluate the results. Only five countries –Brazil, Chile, Colombia, Costa Rica and Uruguay– have attained a per capita income level higher than in the pre-crisis period. Even fewer have achieved a high and sustained rate of growth, Chile and Colombia being the only countries that have been able to expand at more than 5% a year for four consecutive years. Growth rates have been erratic and stop-go cycles have been the norm. In addition, other factors have influenced performance. Initial conditions were different in each country: some started the reform process early, others only in the late 1980s or early 1990s. The policy mix at each stage was also different.

In spite of the differences, after a decade and a half of adjustment it can be concluded that all Latin American countries have been involved in the globalization and adjustment process, and that privatization and deregulation have been an integral part of the policy compact. The results are still unclear and policy instruments are continually evolving, but it is plain that the region is today more open and integrated into the world economy, more privatized and less regulated than it was before 1980. All these things have happened simultaneously; hence, any analysis of results should take account of the context. This is what we shall do in the rest of this paper.

II

Employment, incomes and equity under globalization

1. The effects anticipated

Globalization is expected to have two main effects on labour and incomes. Firstly, productivity gains, particularly in tradable sectors, should result in increased employment and lower prices in those sectors. The latter should also result in improved real incomes and welfare for the population. Secondly, increased wages in export sectors, assumed to be more intensive in unskilled labour, should result in a reduction of wage differentials by skill level and, hence, in increased equity.

The reduction or elimination of tariffs and non-tariff barriers should lead to a fall in the relative prices of tradable goods. This would result, on the production side, in factors being reallocated to export sectors and, on the consumption side, to expenditure being reallocated to imported goods and services. Consequently, there should be a positive effect on employment resulting from export growth, while reductions in the relative prices of importable goods should lead to an increase in real incomes. Trade liberalization should therefore result in increased welfare.

In the short run, however, the employment growth resulting from increased exports could be offset by a decrease in employment in sectors that compete with imports. Increased competition in these sectors forces enterprises to increase productivity, generally at the expense of employment. The net employment effect of economic opening will depend on the demand for labour in both tradable and non-tradable sectors and on labour supply dynamics. This, in turn, will affect average wages in each sector.

Another anticipated result of trade liberalization is that it will lead to a rise in the relative prices of developing country goods whose production involves intensive use of unskilled labour. This would lead to an increase in the demand for unskilled workers and a rise in their relative wages. As a consequence, wage dispersion would diminish.[1]

[1] For a discussion of the theoretical foundations of this expectation and its empirical validity in developed countries see, among others, Bhagwati and Dehejia (1993), Lawrence and Slaughter (1993), Wood (1994), ILO (1995) and Sachs and Shatz (1994).

2. The results in practice

a) *Productivity gains and international competitiveness*

The first of the expected outcomes that is actually observed in most countries is productivity growth in tradable sectors, particularly manufacturing industry. As will be seen below, this outcome is associated with a reduction in the employment level of the sector. During the 1990s, productivity per employee expanded at annual rates of between 5% and 7% in Argentina, Brazil, Mexico and Peru, while the rate was about 3% in Chile.

The effects on international competitiveness vary depending on the country studied and the indicators used to measure labour costs. It is usually argued that overpriced labour can affect access to international markets, and in a more competitive environment costs do indeed matter. Overpriced labour can be the result of higher wages or high non-wage labour costs or both. The situation in most Latin American countries does not seem to justify the priority given to this issue (except for some necessary adjustments).

Although they have recently recovered somewhat, wages in most Latin American countries are still lower than in 1980. Minimum wages were 26% lower on average in 1999 than in 1980, but wages in manufacturing industry rose by 2.9% in the same period. Non-wage labour costs vary from country to country, ranging from 38% to 64% of wages. In the case of Chile and Argentina, non-wage labour costs are higher than in Korea, similar to those of the United States, and much lower than those prevailing in European OECD countries. Hourly labour costs in Latin American manufacturing industry range from US$ 2.10 to US$ 6.50; this is between one third and one eighth of the United States level and less even than in the South-East Asian countries. Labour cost differences per unit of output are smaller due to higher productivity in competing countries (table 1). This shows what a high priority has to be given to raising productivity, as opposed to merely cutting costs, if competitiveness is to be improved (Tokman and Martínez, 1999).

The fact that relative labour costs are not high does not mean there is no scope for making adjustments to the labour cost structure to reduce them further and,

TABLE 1

Selected countries: Labour costs and international competitiveness[a]

	Hourly wage (dollars)	Non-wage labour costs as % of wages	Hourly cost of labour (dollars)	Labour costs per unit of output (United States = 100)	Annual changes 1990-1995					
					Labour costs		Productivity	Competitiveness[b]		
					A	B		A	B	C
Argentina	4.6	42.5	6.5	55	-2.0	13.1	7.0	9.2	-6.1	3.7
Brazil	3.7	58.2	5.9	60	2.9	8.5	7.5	4.5	-0.9	4.3
Chile	2.5	38.0	3.5	43	4.3	9.4	3.2	-1.1	-5.7	5.9
Mexico	1.9	42.0	2.8	47	1.2	1.5	5.2	4.0	3.6	na
Peru	1.3	64.3	2.1	43	5.1	11.6	6.6	1.4	-4.5	0.3
United States	12.6	40.3	17.7	100		2.6	3.8		-1.2	na
Germany	16.1	78.5	28.7	150		2.1	1.8		-0.3	na
Republic of Korea	6.8	21.9	8.2	60		3.6	11.9		8.0	50.0

Source: Tokman and Martínez (1999), ILO (1998) and updating by authors.

[a] Manufacturing industry, circa 1997. Competitiveness is defined as the difference between changes in productivity and labour costs.

[b] A = Changes in local currency at constant prices, deflated by consumer price index (1990-1995).
B = Changes in dollars (1990-1995).
C = Changes in dollars between July 1997 and June 1998.

particularly, to lower the cost of unskilled labour. Taxes on unskilled workers tend to reduce employment, while some of the existing taxes on the wage bill would be more efficient if they were transferred to other sources of revenue, particularly those that go to finance housing or other investments.

The evolution of labour costs in the 1990s also throws up other policy issues for consideration. Labour costs deflated by consumer prices have not increased ahead of productivity, for instance, in Argentina, Brazil, Mexico or Peru, and have thus been no impediment to increased access to international markets. However, when expressed in dollars rather than local currency, or when observed in relation to producer prices, the gains are slighter, and in most cases competitiveness has declined (table 1). This is due to the effects of macroeconomic policy during the period, as in most countries this involved national currencies being kept overvalued owing to the need to reduce inflation and to the liberalization of capital flows. Part of the decline is explained by delays in adjusting the exchange rate.

Meanwhile, domestic prices adapt at differing speeds to a more competitive economic environment: prices for traded goods, generally included in producer prices, adjust relatively quickly, while those for consumer goods, which are more influenced by non-traded goods and services, tend to be slower in adjusting. The result is that while labour costs expressed in consumer price terms did not rise, they actually increased very fast in relation to producer prices. This change in relative prices, while it lies outside the labour market sphere, does influence the dynamics of wage determination because it leads to the outlook of workers (based on the purchasing power of wages) diverging from that of those who operate businesses (based on profit margins).

Furthermore, as the situation after mid-1997 clearly illustrates, competitiveness is also dependent on developments in other countries. Despite a rise of between 0.4% and 10% in the competitiveness of Latin American countries, their ability to compete with goods from the Asian countries deteriorated. Competitiveness gains in these countries were about 50% –ranging from 20% in Thailand to 60% in Malaysia– while among Latin American countries the largest increase, in Colombia, was about 10%.

To sum up, productivity grew, as expected, as a consequence of the reform process, but some adjustments are still needed. Firstly, if international competitiveness is to be maintained, non-wage labour costs need to be examined. Secondly, macroeconomic policies, particularly overvalued exchange rates and relative prices, should be reviewed. Lastly, productivity gains have been insufficient to close the gap with competitors.

b) *Job creation*

A second effect of globalization has been inadequate job creation in relation to the rapid increase in the economically active population (EAP). On average, the non-agricultural EAP has grown by over 3% a year, partly as a result of increasing female participation in the wage economy (table 2). Job creation has lagged due to slow

TABLE 2

Latin America: Economic activity, employment, wages and poverty
(Annual growth rates and index)

Indicator	1980	1985	1990	1995	1999
Economic activity					
GNP[a]	...	0.6	1.9	2.9	0.0
GNP per capita[a]	...	-1.6	-0.1	1.1	-1.8
Inflation[a]	...	134.8	487.5	287.5	9.8
Population and employment					
Population[a]	...	2.1	1.9	1.8	1.8
Total EAP[a]	...	*3.5*	*3.1*	*2.6*	*2.6*
Urban EAP (%)	66.9	70.0	72.8	75.3	76.6
Non-agricultural employment[a]	...	3.5	4.4	3.0	2.8
Open unemployment rate	6.7	10.1	8.0	7.2	8.8
Informal employment (%)[b]	40.2	47.0	44.4	46.5	48.5
Public-sector employment (%)[c]	15.7	16.6	15.5	13.4	13.0
Wages[d]					
Real manufacturing wages	100.0	93.1	86.6	92.9	102.9
Real minimum wages	100.0	86.4	68.4	70.8	73.8
Poverty					
Percentage of households in poverty (%)	35.0	37.0	41.0	38.0	36.0
Urbanization of poverty (%)	71.4	...	85.4	84.2	83.3[e]

Source: ILO, on the basis of national statistics.

[a] Annual growth rates.
[b] Percentage of urban employment.
[c] Percentage of total EAP.
[d] Index 1980 = 100.
[e] 1997 figure.

and erratic economic growth. The result has been rising unemployment.

The average unemployment rate in Latin America rose from 6% in 1980 to 8.7% in 1983, i.e., during the first phase of adjustment. Unemployment fell from 1983 to 1992, but never returned to its 1980 level. After 1992 unemployment grew continuously, reaching 8.8% in 1999. These developments reveal not only the limited capacity of the region's economies to bring down unemployment, but also increased vulnerability, since continuous adjustments entail a return to previous higher levels of unemployment. By 1999, Latin American unemployment had returned to the high levels of the mid-1980s.

Four aspects should be taken into account in evaluating the way unemployment affects the people of Latin America. The first is that it can be misleading simply to compare the unemployment level with, for instance, the rates of over 10% prevailing in some OECD countries. Most countries lack unemployment insurance, and protection is generally occupation-linked. Joblessness means no income and no protection, and this is one of the main sources of social exclusion. Secondly, unemployment disproportionately affects women and young people. While the female unemployment rate is about 30% higher than the average, rates for young people are usually double the national figure. Unsurprisingly, women and young people account for a large proportion of the excluded. Thirdly, there are also large regional variations within countries. Adjustment tends to have a disproportionate effect on places where key sectors in need of restructuring are located. These activities generally constitute the main source of employment and production, and restructuring affects the whole region.

The situation also differs from country to country. Size, the degree of modernization attained and the stage reached in the reform process are determining factors in unemployment. Small, open economies are more vulnerable to external fluctuations and tend to have higher and more erratic unemployment rates than larger, more closed economies (where internal demand plays the biggest role and provides more autonomy). Again, in countries that have reached an advanced stage of urbanization and modernization, labour markets mainly adjust through unemployment, while in those with a

large agricultural population or small formal sector, underemployment is the main adjustment variable. Lastly, the stage reached in the reform process also matters. Early reformers have been the most successful in reducing unemployment, while latecomers –particularly those that are now in the early phases of adjustment– tend to have higher and rising unemployment.

c) *Changes in the employment structure*

In addition to a higher unemployment rate, reform has brought about profound changes in the structure of employment. Four main interrelated processes can be identified: privatization, the shift from goods-producing sectors to services, the increase in informal working, and the loss of job security. These processes can be seen to have taken place in the 1990s, when most countries were already beyond or well advanced in the adjustment process.

Privatization introduced a major change in patterns of job creation in Latin America, owing to the role traditionally played by the public sector as the employer of last resort (something that will be discussed in the next section) and an important contributor to the development of the middle classes. Government did not directly contribute to employment growth in the 1990s. On the contrary, its share of urban employment fell in the region as a whole, from 15.5% in 1990 to 13.0% in 1999. This decrease does not include falls in public-sector employment that took place in earlier periods, as in Chile. This movement from public- to private-sector employment occurred in all countries, while in some –including Argentina, Costa Rica and Panama– the decline amounted to as much as five to ten percentage points.

The employment shift from the public to the private sector was a direct consequence of the privatization and deregulation processes accompanying globalization. State enterprises were transferred to the private sector and government functions were reduced. It was also one of the main results of fiscal discipline, an important component of stabilization policy. Budget deficits were generally reduced by cutting public expenditure, mostly the payroll, through a series of wage and employment cuts (table 3).

Generally speaking, however, the transfer of jobs was not towards larger private companies. Their share of total employment also declined over the same period, although at a slower pace than government employment. Between 1990 and 1998, the employment share accounted for by such companies fell from 40% to 39%, the bulk of this decline taking place in countries such as Brazil, Colombia and Venezuela. If small enterprises are excluded, furthermore, the decline amounts to two percentage points (ILO, 1998). Large enterprises (more than 100 employees) were the most affected by trade liberalization and the need to increase productivity (mostly through employment reduction). Only 17 out of every 100 new jobs created during the 1990s were contributed by such companies. Increased labour flexibility facilitated adjustment, but at the cost of a more erratic employment level, as is clearly illustrated by the 1% decline in employment in large and medium-sized enterprises in 1998, when these firms had to adjust to increased competition from Asian products (figure 1).

The second of the processes referred to, the shift in employment from goods-producing sectors to services, was rapid in countries such as Bolivia, Costa Rica, Ecuador, Peru and Uruguay, where the share of manufacturing employment fell by between four and six percentage points during the 1990s.

In other countries the process was slower because restructuring was at a more mature stage (Chile) or a gradual approach was followed (Brazil and Colombia) or, in cases like Panama, because the economy was small and already open.

The new structural conditions resulting from the adjustment process have left these sectors more vulnerable to changes in competition. Manufacturing industry contracted in 1998 as a result of increased competition from Asian products. This contraction of output and employment was particularly large in food processing, textiles and clothing, shoes and machinery and equipment.

The shift of employment from manufacturing to services is partly the result of increased competition in a more open economy. Falling employment has been accompanied by rising productivity which, particularly in the short run, can only be achieved by cutting jobs. The effect has mainly been felt in urban employment, since agriculture, fishing and mining tend to contribute to employment growth during the liberalization process.

It cannot automatically be assumed that employment growth in the service sector means a shift towards low-productivity jobs. Some of the jobs created in the sector are in services that are integral to the modernization and globalization processes, such as finance, communications and trade. The productivity of these sectors is usually higher than that of manufacturing and can grow more rapidly. Unfortunately, this has not been

TABLE 3

Latin America: Structure of urban employment, 1990 and 1998
(Percentages)

Country and years		Informal sector				Formal sector		
		Total	Own-account workers[a]	Domestic service	Micro-enterprises[b]	Total	Public sector	Small, medium-sized and large private enterprises[c]
Latin America								
1990	*Total*	*44.4*	*23.4*	*5.7*	*15.2*	*55.6*	*15.5*	*40.1*
	Male	41.2	22.8	0.5	17.9	58.8		
	Female	49.2	24.4	14.1	10.7	50.8		
1998	*Total*	*47.9*	*24.7*	*6.9*	*16.3*	*52.1*	*13.0*	*39.1*
	Male	45.0	24.9	0.6	19.6	55.0		
	Female	52.0	24.4	16.0	11.6	48.0		
Argentina								
1990	*Total*	*52.0*	*27.5*	*5.7*	*18.8*	*48.0*	*19.3*	*28.7*
	Male	49.8	28.2	0.5	21.2	50.2		
	Female	55.5	26.5	14.3	14.7	44.5		
1998	*Total*	*49.3*	*22.7*	*6.4*	*20.3*	*50.7*	*12.7*	*38.0*
	Male	48.0	24.1	0.3	23.6	52.0		
	Female	51.4	20.4	15.8	15.2	48.6		
Brazil								
1990	*Total*	*40.6*	*20.3*	*6.9*	*13.5*	*59.4*	*11.0*	*48.4*
	Male	36.1	19.6	0.5	16.0	63.9		
	Female	47.6	21.3	16.7	9.6	52.4		
1998	*Total*	*46.7*	*23.2*	*9.5*	*14.0*	*53.3*	*9.3*	*44.0*
	Male	43.0	25.1	1.0	16.8	57.0		
	Female	51.9	20.4	21.4	10.1	48.1		
Chile								
1990	*Total*	*37.9*	*20.9*	*5.4*	*11.7*	*62.1*	*7.0*	*55.1*
	Male	33.5	21.3	0.2	12.0	66.5		
	Female	45.9	20.1	14.7	11.1	54.1		
1998	*Total*	*37.5*	*18.5*	*5.1*	*13.9*	*62.5*	*7.2*	*55.3*
	Male	32.9	19.2	0.1	13.6	67.1		
	Female	44.8	17.4	13.1	14.3	55.2		
Colombia								
1990	*Total*	*45.7*	*24.1*	*2.0*	*19.5*	*54.3*	*9.6*	*44.7*
	Male	45.1	22.6	0.1	22.3	54.9		
	Female	46.6	26.3	5.0	15.2	53.4		
1998	*Total*	*49.0*	*28.1*	*2.1*	*18.8*	*51.0*	*8.2*	*42.8*
	Male	49.2	28.4	0.2	20.7	50.8		
	Female	48.8	27.7	4.7	16.4	51.2		
Costa Rica								
1990	*Total*	*41.2*	*18.9*	*5.8*	*16.4*	*58.8*	*22.0*	*36.8*
	Male	37.7	19.1	0.3	18.3	62.3		
	Female	47.5	18.6	15.8	13.1	52.5		
1998	*Total*	*45.4*	*17.5*	*6.0*	*21.9*	*54.6*	*17.0*	*37.6*
	Male	42.2	16.5	0.3	25.3	57.8		
	Female	50.7	19.0	15.4	16.2	49.3		
Ecuador								
1990	*Total*	*55.6*	*35.4*	*5.0*	*15.3*	*44.4*	*18.7*	*25.7*
	Male	51.7	32.6	0.7	18.4	48.3		
	Female	62.1	39.9	12.1	10.1	37.9		
1998	*Total*	*58.6*	*33.0*	*6.1*	*19.5*	*41.4*	*14.8*	*26.6*
	Male	54.5	28.9	1.0	24.6	45.5		
	Female	64.1	46.7	9.4	8.0	35.9		

(continued on next page)

Table 3 *(continued)*

Country and years		Informal sector				Formal sector		
		Total	Own-account workers[a]	Domestic service	Micro-enterprises[b]	Total	Public sector	Small, medium-sized and large private enterprises[c]
Honduras								
1990	*Total*	*57.6*	*37.3*	*7.1*	*13.3*	*42.4*	*14.9*	*27.5*
	Male	45.1	25.7	0.5	18.9	54.9		
	Female	72.0	50.5	14.6	6.9	28.0		
1998	*Total*	*57.9*	*37.0*	*5.0*	*15.9*	*42.1*	*10.3*	*31.8*
	Male	52.0	27.9	0.9	23.2	48.0		
	Female	64.1	46.7	9.4	8.0	35.9		
Mexico								
1990	*Total*	*47.5*	*25.0*	*5.1*	*17.3*	*52.5*	*25.0*	*27.5*
	Male	46.6	25.1	0.8	20.7	53.4		
	Female	48.8	24.6	13.4	10.8	51.2		
1998	*Total*	*49.6*	*24.9*	*4.8*	*19.8*	*50.4*	*21.7*	*28.7*
	Male	48.1	23.7	0.2	24.2	51.9		
	Female	51.8	26.8	12.9	12.1	8.2		
Panama								
1990	*Total*	*36.0*	*19.8*	*7.9*	*8.3*	*64.0*	*32.0*	*32.0*
	Male	34.6	23.8	1.0	9.7	65.4		
	Female	38.0	14.0	17.8	6.3	62.0		
1998	*Total*	*38.5*	*21.5*	*6.9*	*10.1*	*61.5*	*21.8*	*39.7*
	Male	35.9	22.8	1.3	11.9	64.1		
	Female	42.3	19.5	15.4	7.4	57.7		
Peru[d]								
1990	*Total*	*52.7*	*33.4*	*4.9*	*14.5*	*47.3*	*11.6*	*35.7*
	Male	46.3	28.9	0.6	16.9	53.7		
	Female	62.9	40.4	11.6	10.8	37.1		
1998	*Total*	*53.7*	*30.2*	*5.5*	*18.0*	*46.3*	*7.2*	*39.1*
	Male	45.3	23.8	0.5	21.0	54.7		
	Female	64.6	38.7	11.9	14.0	35.4		
Uruguay[e]								
1990	*Total*	*39.1*	*18.6*	*6.8*	*13.7*	*60.9*	*20.1*	*40.8*
	Male	33.7	18.6	0.2	15.0	66.3		
	Femae	46.6	18.5	16.2	11.8	53.4		
1998	*Total*	*41.2*	*20.1*	*7.5*	*13.6*	*58.8*	*16.8*	*42.0*
	Male	37.3	22.1	0.2	15.0	62.7		
	Female	46.4	17.5	17.2	11.7	53.6		
Venezuela								
1990	*Total*	*38.6*	*22.3*	*3.9*	*12.4*	*61.4*	*22.3*	*39.1*
	Male	38.3	22.0	0.4	15.9	61.7		
	Female	39.3	22.8	10.4	6.1	60.7		
1998	*Total*	*43.0*	*28.9*	*4.7*	*9.4*	*57.0*	*19.0*	*38.0*
	Male	43.3	27.8	0.2	15.3	56.7		
	Female	46.6	28.4	11.4	6.8	53.4		

Source: ILO estimates, based on country household surveys and other official sources (revised series).

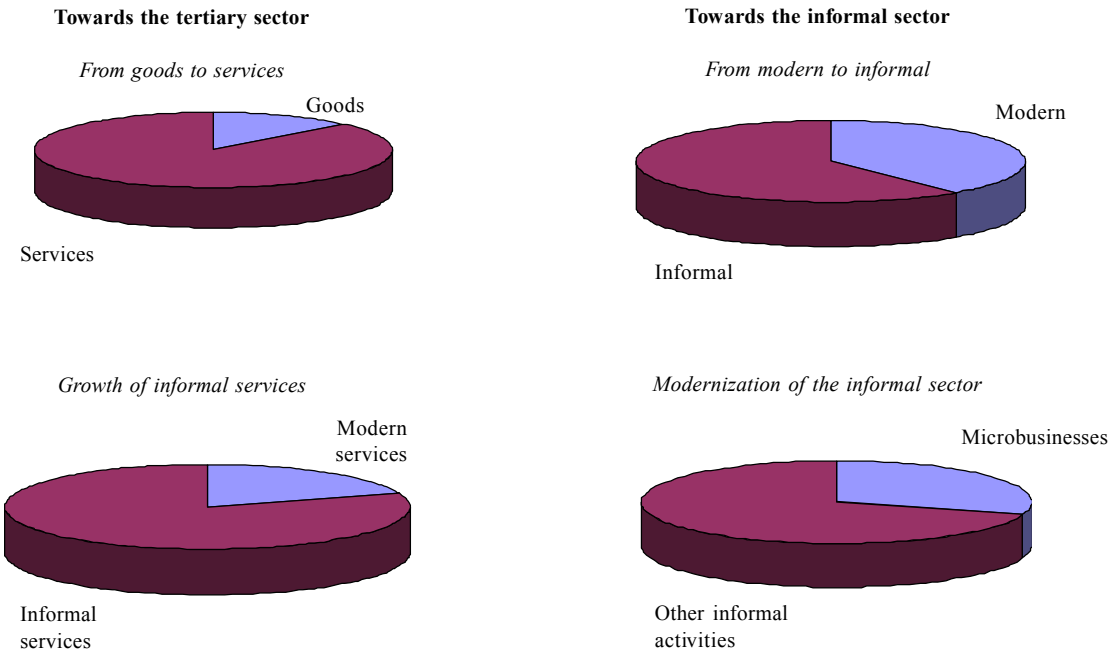
[a] Includes own-account workers (other than professional and technical workers) and unpaid family workers.
[b] Employed in establishments of up to five workers.
[c] Enterprises with six or more workers.
[d] Metropolitan Lima.
[e] Montevideo.

the situation in Latin America in the recent past. Nine out of every ten new jobs created in the 1990s were in services, but 70% of these were in low-productivity services, chiefly personal, retail trade and transportation services in the informal sector. Under these circumstances, the shift to services means a decline in employment quality.

The third major change in the employment structure in the 1990s was the shift from formal to informal employment. As was mentioned earlier, the limited job creation capacity of the formal economy, both public and private, left increasing numbers of people with no alternative but to find or create their own occupations in the informal sector; in the absence of insurance, un-

FIGURE 1

Latin America (selected countries): Employment trends in the 1990s
(Share in employment growth)



employment is a luxury that very few can afford. Slow and erratic growth, and the shedding of labour by the public sector during adjustment, conspired against the creation of jobs in modern activities.

As a result, the proportion of the workforce in informal employment expanded from 44% to 48% between 1990 and 1998. This includes own-account work, unpaid work in family businesses, domestic service and microenterprise (less than 5 employees). Only in Argentina, Chile and Honduras did informal employment not expand as a share of the total, while in the remaining countries informal employment grew twice as fast as total non-agricultural employment.

In the region as a whole, 61 out of every 100 jobs created in the 1990s were informal. As was mentioned earlier, the great majority of new jobs in services were informal; furthermore, the most dynamic component of informal employment growth has been work in microenterprises. Of every 10 new informal jobs, more than three were contributed by microenterprises (figure 1). This could suggest a positive change within informal employment, since microenterprises are more highly organized than most informal activities and average incomes from microenterprises are higher than those of the rest of the informal sector, although not as high as those of the formal sector. Average incomes in microenterprises are about 90% of average incomes in modern activities generally, but only 55% of average incomes in medium-sized and large enterprises.

Nevertheless, microenterprises are increasingly offering valid employment options. In 1998, for instance, they accounted for all new jobs created. Further analysis is needed, however, since although incomes are better, working conditions, job stability and social protection are far from being acceptable. Between 65% and 95% of those working in microenterprises do not have a written contract, and between 65% and 80% are not covered for health risks or old age. They tend to work longer hours and are more likely to have accidents at work. Breaches of basic labour rights (child labour, freedom of association, collective bargaining and forced labour) are also more frequent in establishments of this size than in larger ones. Of course, insecurity is not solely a characteristic of small enterprises; it is also to be found in medium-sized and large firms (ILO, 1998).

The fourth process identified is the loss of job security resulting from increased competition in a more flexible labour environment. The search for cost reductions and flexibility to allow for improvements in competitiveness has led to labour law reforms introducing flexibility at the margins. For new jobs, "non-standard" contracts have been introduced as a less costly and more

flexible alternative to the open-ended contracts that were once the norm. The resultant increase in flexibility and reduction in labour costs were expected to lead to growth in the number of waged jobs created.

In the 1990s waged employment did indeed increase more rapidly than total employment, suggesting that the reform produced incentives to hiring. However, the social cost involved was increasing insecurity of employment. The introduction of "non-standard" labour contracts was accompanied by an increase in the number of workers without any written employment contract at all. It should be noted that neither non-standard contracts nor the lack of any written legal contract automatically entail lower labour protection than standard contracts. Only the reform in Argentina made allowance for this reduction in temporary contracts, the existence of an employment relationship being subject to proof in the absence of a written contract. However, inspection and control become more difficult with temporary contracts. In the case of workers without contracts, many are unofficial and work for cash, so that their conditions of employment are almost impossible to check. This development, furthermore, has come about in a situation where labour inspection is generally weak, and because it is rigid contracts that are legally recognized as standard ones, the reform has meant that powers of guidance have been diminished.

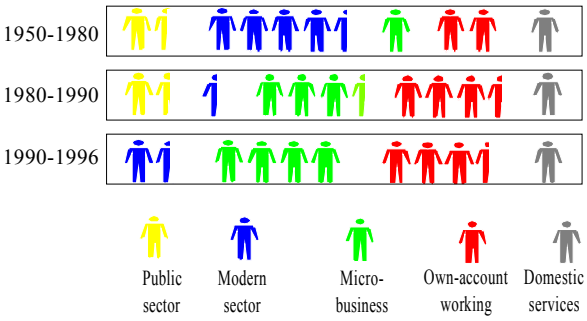
In 1996, workers without contracts or with "non-standard" contracts accounted for 30% of all workers in Chile, 40% in Argentina and Colombia and 74% in Peru. Most worked in microenterprises: 50% in Chile, 65-70% in Argentina and Colombia and 80% in Peru. However, medium-sized and large enterprises recorded the largest proportion of "non-standard" contracts and significant percentages of workers without contracts: 6% in Chile, 11% in Peru and 32% in Argentina and Colombia. In the case of microenterprises, informal working and lack of employment security have a clear tendency to overlap, since both are mainly the result of inability to pay the costs of labour protection. With larger enterprises, the number of unregistered workers is an indication that the law is being circumvented (Tokman and Martínez, eds., 1999).

Not only is the proportion of workers potentially or actually exposed to insecure employment conditions high, but in most countries insecure employment accounts for all job growth in the 1990s. Of the four countries analysed, only in Colombia was there an increase in open-ended employment; in Argentina, Chile and Peru there was a fall in the absolute numbers of such contracts. The exact nature of the transition from permanent to temporary employment differed from country to country. In Argentina, the decline in the number of open-ended contracts was entirely offset by growth in the number of workers without contracts, mainly in larger enterprises. In Peru, the decline in open-ended employment was compensated for in equal proportions by workers with temporary contracts and workers without contracts, mostly in microenterprises. In Chile, most new jobs were provided by larger enterprises under temporary contracts.

The four processes described resulted in a decline in the quality of labour protection in the 1990s. Privatization, which could have been a positive development, was not so because of the inadequacy of job creation in modern private-sector companies. A shift towards tertiary employment is also *a priori* neutral, since good jobs in services could make up for a decline in available manufacturing employment. However, most of the new jobs in services were of low productivity. Increased informal working and insecure employment conditions clearly resulted in lower job quality, although this was somewhat offset by the rapid expansion of employment in microenterprises.

The changes in the employment structure can be more clearly identified if looked at from a longer-term perspective. As can be seen in figure 2,[2] during the three decades prior to adjustment (1950-1980) an average of

FIGURE 2
Latin America (selected countries): Sectoral contribution to job creation, 1950-1996
(Number of jobs contributed out of every 10 new jobs)



[2] Owing to the nature of the available data, in the case of some countries the informal sector as defined for the purposes of figure 2 includes microbusinesses with up to 10 employees, and its employment share relates to urban employment. The revised series, in which the informal sector includes microbusinesses with up to five employees and is related to urban employment, does not permit of long-term comparison.

60% of new jobs in Latin America were created by the formal sectors of the economy, with government accounting for 15% and medium-sized and large private-sector companies for 45%. The informal sector contributed 40% of new jobs, of which only 10% were in microenterprises (ILO, 1996).

A substantial change in the employment structure occurred during the adjustment decade of the 1980s. The contribution made by employment in modern industries fell to two out of every ten new jobs, this decline being most pronounced in modern private-sector companies that had to adjust to a more open economy. The informal sector acted as a buffer: it doubled its contribution to job creation, mostly in microenterprises, where it more than tripled. The 1990s saw a recovery in labour absorption in larger private-sector companies and continuing growth in informal employment.

To sum up, privatization has meant that public-sector employment is no longer contributing to labour absorption. Larger enterprises, while they have been recovering from the adjustment decade, are still well below the pre-adjustment level, and technological change and decentralization of production and employment mean that they are unlikely to be able to return to it. Indeed, business of all sizes account for the same 5.5 out of every 10 new jobs as they did in the pre-adjustment period. The difference is that the main contributors now are microenterprises (including small enterprises). This being the case, and informal and insecure employment still being the norm in the sector, this employment shift has led to a decline in job quality.

d) *Wage trends and differentials*

The adjustment process was expected to have two effects on wages. It was predicted that wage levels would increase as productivity grew, while wage differentials by skill level would narrow as the demand for unskilled labour increased because of the expansion of trade based on labour-intensive sectors.

In 1990, both industrial and minimum wage levels were lower in real terms than they had been in 1980. In both cases, though, there was a recovery during the 1990s. This was mainly due to success in reducing inflation, which declined from three digits to less than 10% on average across Latin America. Latterly, productivity growth also contributed, particularly in the industrial sector. Nonetheless, as table 2 shows, minimum wages are still substantially lower than in 1980.

Wage differentials have behaved in an unexpected manner, with the gaps between minimum and industrial wages and differences by skill or educational level tending to widen. Industrial wages grew by 1.4% a year between 1990 and 1997, while minimum wages increased by only 0.3%. Across Latin America, income differentials between professional and technical workers and those employed in low-productivity sectors increased from 40% to 60% on average between 1990 and 1994. This was the result of substantial growth in the real incomes of high-skilled workers in modern activities and slow increases or even declines in the wages of unskilled labour in low-productivity sectors. In eight out of ten countries for which data were available, the wage gap by skill level widened (ECLAC, 1997a). The same can also be seen when the wages of skilled workers are compared with those of blue-collar workers since 1988 (IDB, 1998).

As wage gaps in Latin America widened over this period, exactly the opposite trend was being seen in the South-East Asian countries, despite the fact that in 1980 wage gaps in Latin America were already the largest in the world. By 1997, the wage gap in Latin America was 1.9 times as high as in developed countries and the South-East Asian countries.

A number of explanations can be put forward for this unexpected development. The effect of capital liberalization on the prices of capital goods could have brought about an increase in investment and a concomitant demand for skilled labour. The expansion of imports from countries like China with an even greater abundance of unskilled labour than Latin America, and currency appreciation, which favoured growth in more skill-intensive non-tradable goods, are other factors (Lustig, 1998).

In addition, studies done on Brazil, Chile and Peru (Meller and Tokman, 1996; Paes de Barros and others, 1996 and Saavedra, 1996) suggest that the maturity and characteristics of the trade liberalization process influence the evolution of wage differentials. In Chile, where the liberalization process was at a more mature stage, large enterprises were able to expand employment after 1984; in Brazil and Peru (two late starters in the process), large enterprises reduced employment in order to raise productivity and competitiveness, while most labour absorption took place in small enterprises and microenterprises. In Chile demand for skilled labour grew, while in the other two countries there was a shift of labour from higher- to lower-productivity enterprises and sectors, a process that was accompanied by net employment growth in Peru but a net contraction in Brazil.

TABLE 4

Argentina, Chile, Colombia and Peru: Insecure employment

	Waged workers[a]			Hourly cost of labour[b]			Composition of changes in waged employment[c]			
	On temporary contracts	Without contracts	Total	With temporary contracts	Without contracts	With open -ended contracts	Open-ended contracts	Temporary contracts	Without contracts	Total change in waged employment
Argentina	12.7	33.0	35.7	3.5	2.8	6.1	-652.7	25.7	726.9	100.0
Chile	14.7	15.6	30.3	1.4	1.0	2.1	-89.9	138.9	51.0	100.0
Colombia	8.3	31.0	39.3	1.9	1.6	3.3	81.9	13.3	4.8	100.0
Peru	32.6	41.1	73.7	1.4	1.1	2.1	-19.3	56.8	62.6	100.0

Source: Tokman and Martínez (eds.) (1999) and ILO (1998).

[a] As percentages of total waged employment.
[b] In dollars.
[c] As percentages of changes in waged employment between 1990 and 1996.

In both cases, however, wages for unskilled labour declined, either as a result of this employment shift or because of the introduction of lower levels of labour protection. Workers in microenterprises earn an average of 30% to 50% less than those in larger establishments (ILO, 1997a), and the figure is still 20% even when personal characteristics are homogenized (IDB, 1998). However, large companies replacing workers on long-term contracts with temporary ones reduce wages by between 35% and 40%, and by an additional 15% to 30% if no written contract is drawn up (table 4). It is mainly unskilled workers who are switched to employment contracts of this type, and this practice has neutralized any demand effect that may have resulted from trade liberalization (ILO, 1998).

e) *Poverty and equity*

Poverty and inequality have increased during the reform process. Today, on average, there are more poor people and income differences are larger in Latin America than before. The trend has not been a continuous one. During the 1990s, when several countries had already completed the stabilization and trade liberalization phases, poverty fell in most of the countries for which data are available. Only in Argentina and Venezuela did the level of poverty rise, while in Mexico it remained constant. In the 13 remaining countries for which there are data, reported poverty fell (ECLAC, 1999).

The level of poverty is still higher today than in 1980, and there has been no improvement in equity. On the contrary, income concentration has increased substantially since the early 1980s, so that the Gini coefficient is now at a level similar to that seen in 1970 (0.52). This is because the income share of the poorest quintile has declined while that of the highest quintile has risen continuously, a rise that was interrupted only between 1980 and 1983. The intermediate quintiles, while performing better than the poorest, have still not recovered the income shares they had at the beginning of the 1980s. In fact, of the two countries (Chile and Uruguay) that can show a significant decrease in poverty, only in Uruguay has equity increased at the same time.

Income concentration in Latin America has historically been the highest in the world. At present, the income share of the top 5% is double that of the same group in industrialized countries, and more than 60% higher than in South-East Asian countries. At the other extreme, the income share of the poorest 30%, at 7.5%, is the lowest in the world, being just 60% of the equivalent level in industrialized and Asian countries (IDB, 1998). When a successful performer like Chile is compared to the United States, it is found that the income shares of the bottom 20% are similar (about 4.5%). However, to find a time when the shares of the upper 20% were comparable, we have to go back as far as 1929. If the Gini coefficient is calculated for 90% of the Latin American population (excluding the upper 10%) it is found to average 0.36, which is similar to the level seen in the United States, while in six of the countries it is actually lower than in the United States (IDB, 1998). This clearly shows that greater income concentration among the highest groups is a key explanatory factor.

Of no less importance is the question of why globalization, and the adjustment package that accompanied it, did not help to bring Latin American equity levels closer to those of the rest of the world. Conventional wisdom, based on the pioneering studies of Kuznets, would lead one to expect that, after a period

of increased income concentration in the early stage of development, equity would improve. This conventional wisdom does not seem to hold today, even for developed countries. The trend towards greater equity has been cut short or, at best, suspended. Inequality has increased in the United States since the end of the 1960s, while in the United Kingdom it increased from 1979 to 1989, and it likewise rose in Sweden after 1988 (Atkinson, 1996 and Krugman, 1995). This suggests that Latin American countries may be following a universal path as a result of policy homogenization, without having passed through the stage of increased equity seen earlier in those countries.

Several factors can help explain why globalization has not improved equity in Latin America. They relate to population dynamics, the distribution of opportunities and the workings of labour markets during the adjustment process.

Rapid population growth has resulted, particularly in poor households, in larger household size (50% more members in the lowest quintile than in the highest), higher dependency rates (almost treble) and lower participation rates (60%) (ECLAC, 1997a).

Access to opportunities, and particularly to education, is also unequal. Although the time people spend in education has increased on average (albeit more slowly than in South-East Asian countries), it tends to be unequally distributed. There is a high drop-out rate among poor households. While 94% of poor children in educationally advanced countries are enrolled in the first year of school, the figure is only 76% in the less advanced countries. Enrolment rates decrease to 63% and 32% by the fifth year, and to 15% and 6% by the ninth year. Entry rates are similar for poor children and children from higher-income families, but the latter remain at school for longer periods. By the fifth year, the rates are 93% and 83%, while by the ninth year they are 58% and 49% (IDB, 1998). Inequality of access is reinforced by higher rates of education to university level among higher-income families and by differences in education quality. Academic attainments (in mathematics and science) are on average 50% higher in private schools, which are attended only by children from higher-income families, than in State schools, which 90% of the children of the poor attend.

A significant proportion of income differences, more than 55%, is explained by labour market outcomes. As argued above, increased unemployment, employment shifts towards less productive, more unstable jobs and increased wage differentials tend to widen income inequalities since they affect poor households disproportionately. Unemployment rates are higher in poor households (in Chile the rate for the poorest quintile was 2.7 times that for the richest quintile in 1996). In addition, job allocation is segmented. High-quality, well-paid jobs are largely held by members of higher-income families, while low-qual-

TABLE 5

Latin America (nine countries): Indicators of employment transformation, informal working and average income growth by income group[a]
(Percentages and annual growth rates)

Country	Period	Employment[b]				Informal working[c]				Average income of the employed[d]			
		Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High
Argentina	(1990-96)	0.5	1.0	1.2	-1.3	66	79	77	...	4.5	3.5	4.2	6.4
Brazil	(1992-95)	3.5	5.8	2.2	3.5	81	66	85	95	1.3	1.3	1.2	1.5
Chile	(1990-96)	3.1	3.8	2.7	2.9	29	14	30	42	5.6	4.1	5.8	5.9
Colombia	(1992-96)	1.8	1.2	1.9	2.6	37	...	66	22	3.6	2.5	3.3	3.9
Costa Rica	(1990-95)	4.4	3.7	3.5	7.0	51	70	48	42	1.9	-0.6	1.4	2.7
Mexico	(1990-95)	6.4	7.8	6.0	5.5	58	87	54	18	-2.1	-3.8	-2.1	0.2
Panama	(1989-95)	6.8	6.3	7.2	6.8	38	45	35	31	1.4	2.6	0.6	2.2
Peru	(1991-95)	5.1	6.3	4.2	5.4	69	97	51	32	3.0	2.7	-0.2	3.0
Venezuela	(1990-96)	2.6	2.3	2.2	3.8	77	100	87	31	-10.3	-11.5	-9.8	-9.1

Source: ILO, on the basis of household surveys in Argentina (Greater Buenos Aires), Brazil (urban area), Chile (urban area), Colombia (10 metropolitan areas), Costa Rica (urban area), Mexico (39 cities), Panama (metropolitan area), Peru (metropolitan Lima) and Venezuela (urban area).

[a] Data refer to those employed in urban areas, excluding the agricultural and mining sectors. Workers have been grouped according to income levels as determined by per capita household income quintiles. The income levels are: low (quintile I + quintile II), medium (quintile III + quintile IV) and high (quintile V). All indicators relate to the period shown for each country.
[b] Annual rate of employment growth (average for the period shown for each country).
[c] Percentage of new jobs in informal activities during the period shown for each country.
[d] Annual rate of average income growth for those in work, measured in constant prices (average for the period shown for each country).

ity, informal and unskilled jobs tend to be taken up by people from poor households. Employment among the poorest 40% in Chile increased between 1992 and 1994; while formal employment declined, the number of informal jobs grew by more than 20%. The opposite happened in the upper quintile, where formal employment expanded by 13.5% and informal employment decreased by 2.7%. More than half of all new jobs requiring high educational levels went to upper-income families, while upward mobility among the bottom 40% was limited, as they tended to take up jobs with secondary or technical requirements (Tokman, 1998).

Labour market outcomes are a key factor in the development of poverty and equity. This does not mean that non-work incomes are not important, but that the two cannot be considered in isolation from one another. Income concentration by household is currently similar to the concentration of earnings by worker in 14 Latin American countries (with Gini coefficients of 0.52 and 0.51 respectively) (IDB, 1998). The above analysis, then, can be translated into poverty and equity, and we have done this for nine countries in the 1990s (tables 5 and 6). The countries included were Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Panama, Peru and Venezuela (ILO, 1997a).

TABLE 6

Latin America (nine countries): Distribution of income among the employed, by income level[a]
(Percentages)

Country		Levels			Inequality ratio[b]
		Low	Medium	High	
Argentina					
	1990	7.9	34.6	57.5	7.0
	1996	6.8	35.4	57.8	8.0
	Change	-1.1	0.8	0.3	
Brazil					
	1992	5.1	29.2	65.7	19.2
	1995	5.3	27.3	67.4	21.5
	Change	0.2	-1.9	1.7	
Chile					
	1990	11.3	30.7	58.0	9.4
	1996	10.8	30.6	58.6	10.4
	Change	-0.5	-0.1	0.6	
Colombia					
	1992	16.8	33.5	49.7	4.3
	1996	15.6	33.0	51.4	4.6
	Change	-1.2	-0.5	1.7	
Costa Rica					
	1990	19.2	41.6	39.2	3.0
	1995	15.8	38.7	45.5	3.4
	Change	-3.4	-2.9	6.3	
Mexico					
	1990	15.0	37.5	47.5	6.0
	1995	14.3	35.9	49.8	7.1
	Change	-0.7	-1.6	2.3	
Panama					
	1989	14.3	37.7	48.0	4.7
	1995	14.7	35.9	49.4	4.7
	Change	0.4	-1.8	1.4	
Peru					
	1991	13.2	34.7	52.1	7.9
	1995	14.2	30.9	54.9	8.5
	Change	1.0	-3.8	2.8	
Venezuela					
	1990	18.4	38.5	43.1	4.7
	1996	13.6	39.0	47.4	7.6
	Change	-4.8	0.5	4.3	

Source: ILO, on the basis of household surveys in Argentina (Greater Buenos Aires), Brazil (urban area), Chile (urban area), Colombia (10 metropolitan areas), Costa Rica (urban area), Mexico (39 cities), Panama (metropolitan area), Peru (metropolitan Lima) and Venezuela (urban area).

[a] Constant prices.

[b] The inequality ratio measures the relationship between the nominal average incomes of the highest level (quintile V) and the lowest level (quintiles I and II).

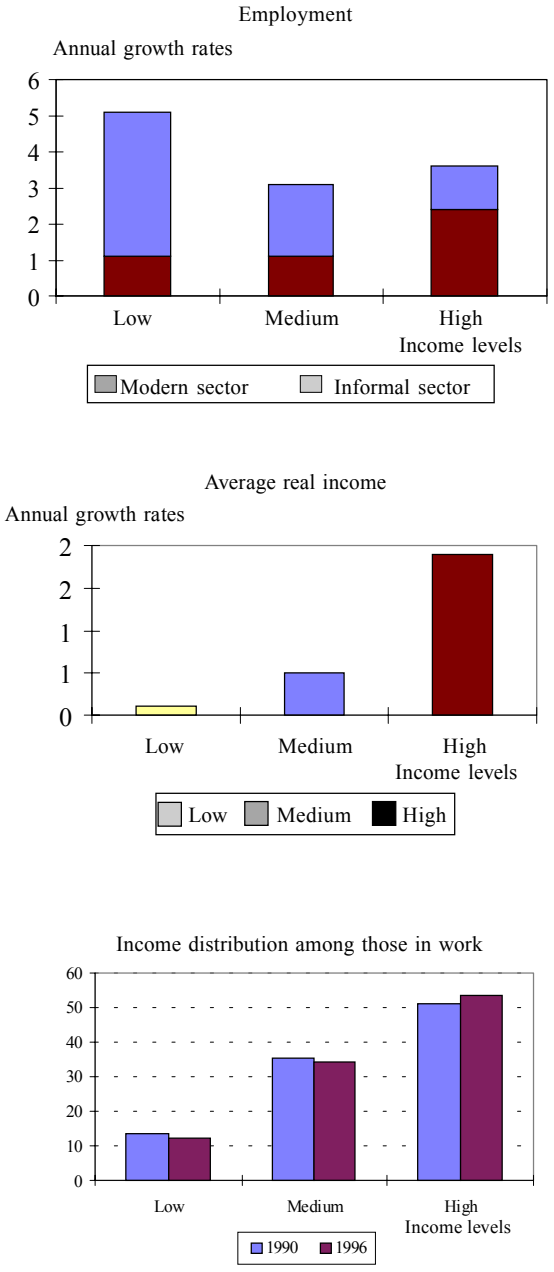
On average, in the nine countries included, both employment and income per worker increased in the 1990s, but the distribution of income favoured the upper 20% of families. Employment grew fastest in poor households, followed by households in the upper 20% of income. Middle-income groups benefited the least (figure 3). Average income, however, grew most rapidly in the higher income group, less rapidly in the middle and most slowly among poor households. This is a consequence of segmented access to jobs by different income groups. The poor, lacking in human capital, tend to get access to informal jobs, while higher-income families tend to take up better jobs. About 70 out of every 100 new jobs taken up by the poorest 40% were informal, while in the case of the middle 40% the ratio was 52 out of every 100 new jobs. As a result, income concentration, as measured by the income difference between the top 20% and the bottom 40%, increased in all the countries considered. Both the poor and the intermediate groups saw their share of total income diminish, the upper 20% being the only gainers. It seems likely, however, that relative poverty decreased. Growth in employment and in earnings per worker, plus an increase in the number of family members at work, resulted in higher incomes for the poor and lower poverty in most countries during this period, the exceptions being Mexico and Venezuela.

The situation is fairly homogeneous across all the countries. Incomes per worker grew fastest in the upper-income group in all the nine countries considered, and employment did so in six of them. The situation as regards developments in the poor and middle groups is more diverse. In most countries, employment grew more rapidly for the poorest 40% than for the middle 40%. However, income per worker grew faster for the middle-income group than for the low-income group in six of the nine countries studied. As noted earlier, this was the result of differentiated access to jobs. Income differentials between the top 20% and the bottom 40% increased in all cases, with the cost being borne by the poor and middle groups. In half the countries the poor lost more ground than the middle group, while in the remainder the reverse was true.

FIGURE 3

Latin America (selected countries): Employment and income growth by income level, 1990-1996

(Percentages)



III

Adjustment, global economies and social stratification

Both the adjustment process in national economies and the subsequent integration of these into the international economy have had a significant impact on the social stratification system. This is because that system is mainly based on an occupational structure that has changed to reflect the transformations wrought in the labour market by economic restructuring. Some of the changes that have taken place, and the sociological consequences of these, will be analysed below, with particular attention being paid to four aspects. The first is the relationship between the transformation of public employment and middle class impoverishment. The second is the way privatization generates increased social heterogeneity, as a result of both involuntary labour mobility and the growth of outsourcing. The third is the influence of transnationalization on labour relation systems. Lastly, we shall look at the increased differentiation emerging in employment growth areas, like microenterprise and agriculture.

1. Public-sector employment and the middle class

The first important issue is the new role of the State and its impact on the labour market. This transformation has had two main effects. In the first instance, public-sector employment has declined in virtually all the countries of the region. On average, public-sector employment has decreased from 16% of the economically active population at the beginning of the 1980s to 13% today, a fall of almost 20%. This average masks particularly steep drops in some countries. For example, between 1990 and 1997 public-sector employment decreased by 32% in Argentina, 33% in Bolivia, 22% in Costa Rica and 28% in Panama. This process has had a large influence on social stratification in Latin America. It is a well documented fact that the origins and development of the middle class in Latin America were closely associated with the role of the State in promoting social and economic development during this century. In some countries this process began in the early decades of the century, in others it took place after the Second World War, and in others again it is still going on, but it is a feature of the entire region. This role encompassed the creation of public employment and the hiring of administrative staff to implement the development policies of the State, including health, education, public works and housing. The State was involved in creating employment in public enterprises of all kinds, but essentially in those sectors deemed to be of national strategic importance (utilities, key natural resources and basic industries). One illustration of the importance of public-sector employment to the development of the middle class is the observation (Echeverría, 1985) that, in the 1970s, 60% of all Latin American professionals were civil servants.

The occupational status of civil servants who have lost their jobs as a result of the decline in public-sector employment is unclear, and probably varies between and within countries. In some instances former civil servants have been eligible to receive compensation payments, with which they have been able to start their own businesses, usually as independent contractors or as micro-entrepreneurs. In many of these cases their position may have improved. In other cases, these redundancies have led to downward mobility. The fact is that, in some countries, people discharged from the civil service and public-sector enterprises have experienced impoverishment and loss of status, especially those who were not professionals and whose status was based not on their educational attainments but on the occupational positions they held.

Again, those who have remained in public employment have also lost status. With the economic adjustment measures that have been taken, the importance of State administration has been reduced. At the same time, the prevailing ideological standpoint plays down the role of the State in society, and public functions do not have the same prestige as before. One indication of this is the reduced remuneration now given to civil servants; during the 1980s, the salaries of public employees fell by an average of 30% (ILO, 1992).

Of course, civil servants still enjoy considerable employment stability, coupled with a certain amount of social protection and safety nets that, even though they are far from satisfactory, provide some security

from the most pronounced of the negative trends operating in today's labour market. Furthermore, not all the remaining civil servants have seen their position worsen. One group, albeit small, have improved their incomes and status because they have been given increased responsibilities and because demand from the private sector for their type of specialization is high. This is particularly true of those working for essential institutions in the new economic system, such as those in charge of overseeing and collecting tax revenues or customs duties. It is also true of those with a regulatory role in different areas of the financial system such as banking, insurance and stock markets, and in the institutions created to regulate privatized social security activities and utilities. As a result, wage and status differentials have widened in what used to be a very homogeneous sector. The increasingly heterogeneous character of the sector is not necessarily a negative feature. Indeed, it may lead to greater economic efficiency in the public sector if incentives related to labour productivity are introduced, as in fact is happening in areas like education and health. Furthermore, if a highly skilled labour force can be retained in the civil service by keeping wages and working conditions competitive with the private sector, then the quality of the product will improve. Creating opportunities for social mobility and higher status for some of those working in the public sector by allowing wage differentials to increase can result in improvements to the overall performance of the sector.

2. Social heterogeneity and privatization of public enterprises

The second feature of the changed role of the State is the privatization of public-sector enterprises that has taken place throughout Latin America. Privatization has had a major impact on the way the labour market works, particularly where certain of its institutional characteristics are concerned. Labour market flexibility has been achieved by various means. The first is greater scope to dismiss workers. In almost all public enterprises that have been privatized, a proportion of the labour force has been made redundant, the result in the first instance being an increase in open unemployment. This process, of course, is similar to the one seen in the private sector. Some of these workers have not been able to find stable work and have become downwardly mobile, alternating between periods of underemployment and unemployment. Others have found employment similar to the work they did for the public-sector enterprises concerned. Lastly, the rest have turned themselves into entrepreneurs, creating businesses of their own that in many cases have functional links to the large companies they were formerly employed by. In other words, when workers and employees in general are dismissed from newly privatized enterprises, some of their former functions, including some essential ones, are outsourced, and these enterprises subcontract with smaller firms for this work. In this way, a subcontracting chain is established. This arrangement has traditionally been quite common in some economic sectors, construction being an example. Today, it is also to be found in the primary sectors, basic utilities, telecommunications, commerce and financial services.

Outsourcing gives companies greater flexibility, enabling them to respond appropriately to fluctuations in the economic environment. Although there has been no thorough macro-evaluation in respect of income and employment, national case studies show that the impact is heterogeneous. For example, in the Chilean State mining sector, where extensive redundancies have been made to reduce production costs, many workers have been rehired on a subcontracting basis. While they have indeed forfeited employment stability and significant non-wage benefits, working conditions and accident rates have improved (ILO, 1997b). On the other hand, in many other cases income and employment conditions have deteriorated. Insecure employment abounds in different sectors and countries where subcontracting is becoming a common feature of the labour market. In these cases, temporary jobs, lack of social security coverage and the absence of unions, collective bargaining and training mechanisms may well be the norm, even though wages might be higher.

3. Transnational enterprises and their social effects

Privatization of State enterprises has also increased the presence of transnational corporations. This has generated a new managerial stratum, characterized by very high incomes, an international outlook (as opposed to national interests) and a corporate ideology based on the idea that globalization redefines national boundaries and local interests. This stratum is to be found not only in privatized public enterprises but also in private companies, particularly those engaged in trading, financial services and industry. One of the effects of the transnational status and management style of these managers is that they tend to apply international standards to labour relations, without recognizing national

and local characteristics. Often they are also shareholders in the company, which gives them a concrete stake in its interests. They are also involved, however, in making the whole economic system work at a macro level, insofar as events in the capital and financial markets directly affect their own overall incomes (in countries where privatized pension funds have been allowed to invest in shares, this is also the case for all workers and employees participating in the system).

One specific kind of transnational presence is the so-called *maquila* or inbond assembly system whereby certain parts of a company's production process are transferred to another country, this usually being justified in terms of lower labour costs as these have a large direct effect on total production costs (labour accounts for 54% of total costs in the typical Central American *maquila* or inbond assembly plant, where labour costs are 3.5 times lower than in the United States). In some areas of Latin America, this form of production is increasingly important. In Central America, plants of this type now account for 250,000 jobs (400,000 if the Dominican Republic is included), representing 30% of employment in the formal industrial sector, 20% of export value added and about 10% of industrial GNP (Gitli, 1997). Their impact, then, has been significant, and in some cases particularly disadvantaged groups in the labour market, mainly women, have benefited from the presence of these plants in their respective countries. This has become a means of increasing labour force participation among these groups, which constitute a social stratum that is clearly dependent on the transnational activities increasingly being undertaken by firms from the developed world as national economies globalize.

The same study shows, however, that labour standards and even human rights are not always respected. Sweatshops are widespread, even though there is increasing pressure for foreign firms to comply with minimum standards in their host countries. The question that remains to be answered is whether this is at all possible when low labour costs are the driving force behind the very existence of the inbond assembly industry.

4. Microenterprises and the informal sector

Microenterprises, many of them informal, have by and large been the main source of employment in Latin America during the last decade. The social effects of this trend have been important. To begin with, it has weakened the waged workforce that traditionally sustained the labour movement. Permanent blue-collar workers in medium-sized and large industrial companies have increasingly been outnumbered by wage earners in microenterprises. Others have been turned into independent contractors, mainly in the trade and services sectors.

The way microenterprises have developed has, in many cases, reflected their relationship with the international economy. While a large majority of microenterprises cater to national markets, a proportion are now linked through exports to the world economy. Some authors have argued that this "neo-informality" is a characteristic of today's labour markets, particularly when enterprises form part of subcontracting chains with the inbond assembly operations of foreign companies, and when they have found specific niches in particular external markets (Pérez-Sáinz, 1996). In none of them, though, is there a significant division between labour and capital.

At this point it is worth recalling that up until the 1970s the evolution of social stratification in Latin America was a relatively straightforward process in which the labour force clearly experienced structural social mobility. Indeed, research carried out by Germani, Stavenhagen and Medina Echeverría, among others, suggests there was a long-standing trend of upward mobility from low-productivity occupations to higher-productivity ones, interpreted as being chiefly a shift between sectors (from agriculture to manufacturing and services) and between occupational categories (from blue-collar to non-manual) (see Filgueira and Geneletti, 1981).

This seems no longer to be the case. The position of the present paper is that one of the results of adjustment policies and the globalization of national economies has been the emergence of heterogeneous characteristics within segments of the labour market, and this phenomenon is seen most clearly when the microenterprise sector is analysed. "Small scale" means many different things in both economic and social terms. Some microenterprises are highly capitalized, have links to dynamic markets, operate in leading sectors and employ increasingly highly qualified workforces, while others again are conventional in terms of capital and labour use. Hence, heterogeneity is increasing as a result of current economic developments: those employed in enterprises that are linked to the developed strata have benefited in terms of income and employment opportunities (although not necessarily as regards employment quality), while those who remain cut off from the main thrust of the economy

have lagged behind. They continue to work in low-productivity occupations, with low skills and little job security.

5. Sectoral analysis

Heterogeneous trends in the labour market, and the social impact these give rise to, can also be observed at the sectoral level. Social strata will vary according to the way businesses are linked with the rest of the economy (national and international). The development of agriculture clearly illustrates this point. Those agro-industrial sectors that have grown on the basis of external markets require a type of labour force different to that employed in traditional agriculture, and have generated a new set of occupations. Firstly, they require a relatively well trained and highly skilled labour force. Secondly, the jobs they generate are mostly temporary. Thirdly, they have opened up new waged employment options for people who were previously unemployed and/or not economically active, particularly women, whose increased participation in the labour market has led to changes in the organization of the family and the distribution of roles within it. Lastly, most of these jobs are remunerated according to labour productivity. These characteristics contrast strongly with those of the traditional worker, the permanent, low-skilled male wage earner, employed in the cultivation of traditional crops and earning, if he is lucky, the minimum wage. Within a single occupational category, therefore, the jobs available have become more diverse in terms of the workforce required, the personal characteristics of this workforce, productivity standards and time spent in the labour market. To sum up, we can say that heterogeneity has been a traditional feature of agriculture, an example of this being the coexistence of plantations and a peasant economy. The difference today is that this heterogeneity is also to be found within occupational categories so that, for example, the characteristics of waged labour vary depending on whether or not the specific sector concerned is linked to the wider economic system.

IV

Final remarks

Globalization cannot be isolated from the other policies that have accompanied it over the last twenty years. They constitute a policy compact that it is very difficult, both analytically and in practice, to break down into its constituent parts. Three processes have been scrutinized: *globalization, privatization* and *deregulation.* The effects on social stratification, mainly through labour market outcomes, have been the focus of our analysis, because the occupational structure is the basis of the system of stratification.

The main conclusion is that the social structure in Latin America has been placed under tension during the reform period. This tension has affected social cohesion and introduced greater heterogeneity. As with all processes, there are winners and losers. The difference this time is that the changes are substantial and will have a structural effect on peoples, societies and nations not only today but into the future.

Change, particularly during the 1990s, has not all been for the worse. Poverty is on a declining trend, and the poor are better off in income terms. However, equity has deteriorated. The winners are a minority, while the rest, not only the poor but middle-income groups as well, increasingly lag behind in relative terms. The effects of the policy compact on employment and earnings, as well as on equality of opportunities, have proven to be an important determinant of this outcome. In a region where inequality is already the highest in the world, this is an unwelcome trend.

There seems to be enough evidence to sustain the proposition that the policy compact has led to greater concentration. Most of the positive effects have benefited sectors that were already situated in the upper echelons of income distribution: the policy compact has favoured the relatively rich. Those negative effects that have occurred in the labour market as a result of the policy compact –increasingly insecure working conditions (lack of contracts, social protection, etc.), the shift of employment towards the service sector and informal jobs, unemployment– have mostly been concentrated among sectors that were already relatively poor. Thus, differences have increased. Wage earners may actually be paid more now than in the recent past, but their jobs are in many instances more informal and

less secure. In these cases, workers' status has changed for the worse.

The middle stratum has also experienced decreased levels of welfare. This paper has described the negative effects of the compact on public-sector employment, and the ensuing effects on social stratification. It should also be added that the benefits of social policies have diminished, insofar as these policies have become more focused on the poor at the expense of middle-income groups. As a consequence, the middle classes now have less protection against unemployment and poor working conditions, public transfers (in the form of monetary benefits) have diminished and many occupations that hitherto provided them with status have either lost their social significance or disappeared altogether.

This unequal distribution of gains and losses seems even more regrettable in view of the high hopes being placed in the positive effects of globalization –a path to which all Latin American countries adhered from the early stages– on growth, equity and social integration. The issue, however, is how far globalization has brought additional distortions to an already unbalanced social situation. To place this in the right perspective, it should be recalled that the starting point from which globalization set out was not conducive to a process of social adjustment, since high income concentration and severe macroeconomic imbalances limited any positive effects that might have emerged from closer integration into the world economy. The analysis, then, should focus more on the post-adjustment situation.

As has been shown, there have been fundamental changes in the employment structure as well as in incomes and job quality. In most cases, people have found that the direction of change has been downward. Unemployment, a new feature of the situation, has also contributed to social exclusion, while volatility, which is associated with the workings of a more open economy, has brought instability in jobs and incomes. Unsurprisingly, the main fear of people in the region today is for their jobs, the chief concerns being instability and loss of labour protection. Demands for increased labour protection during times of adjustment have been thwarted by the need to husband resources, and particularly for Governments to correct fiscal imbalances.

Globalization has brought new dimensions to economic analysis of labour markets, given their increased links to trade, finance and communications at the international level. The old centre-periphery analysis, which has strongly influenced the Latin American intellectual tradition, is giving way to dependence and marginality analysis. Linkages today are not only closer but also of a different nature. Heterogeneity has increased.

A direct way of looking at this relationship is to identify population groups that are more closely linked to the global economy than to the country in which they live. A case that provides an interesting illustration of this situation is that of Mexico, which of all the countries in the region has perhaps been one of the most exposed to globalization in the recent past. Castañeda (1996) identifies four groups that are directly dependent on economic developments in the United States, totalling between them 20% to 25% of the Mexican population. Mexican migrants living in the United States are the first group. They constitute a source of income for an estimated 10 million Mexican residents; remittances, which have grown exponentially, are an important contribution to the budgets of poor families (it is estimated that in 1998 they totalled US$ 5.5 billion, having tripled since 1990). A second group is involved with exports, including inbond assembly exports, which are produced by 2,500 establishments and benefit a further two million people, plus other export-related activities in agriculture and manufacturing industry. Several examples serve to illustrate this. General Motors of Mexico, the country's biggest private-sector exporter, sells 40% more cars abroad than in the domestic market. Corona, the main beer producer, sells one bottle abroad for each bottle that goes to the internal market, and Cementos Mexicanos exported 90% of its output in 1993. A third group whose livelihood depends on foreigners consists of those working in the tourism sector. It is estimated that 600,000 Mexicans are employed in this activity and hence insulated from fluctuations in the domestic economy. Lastly, a large number of people have links with foreign countries as legal or illegal property owners, or simply because they save, own assets, use financial instruments (like credit cards) or study or temporarily work abroad in professional and technical jobs.

Castañeda's analysis can be extended to the rest of Latin America, with different proportions involved but with similar types of relationships. Our own analysis shows, though, that not all sectors or all occupations within sectors have become global. The effects have not been homogeneous. Not all sectors have been equally affected, and within sectors the impact has been differentiated. Parts of industry have integrated into the world economy, while others have lagged behind; agro-industry, for instance, has established strong links with

international markets, while traditional peasant agriculture has remained autonomous. Occupations have become more heterogeneous, both between and within sectors. This is particularly the case with the inbond assembly industry, tourism and subcontracting in manufacturing industry. Businesses and hence owners, managers, technicians and skilled labour are incorporated into the global economy; unskilled workers, while better off than before, are in an insecure position characterized by poor incomes, instability and lack of protection. Unemployment has added to social exclusion, particularly among women and young people.

Changes in the social structure have resulted from labour market effects; the differences between different population groups in the degree of global economic integration go beyond jobs and incomes to permeate social habits. Cultural and economic differences translate into different social behaviour. Urban life is increasingly segregated; there are now ghettos for the rich, as there have traditionally been for the poor. Closed areas, private security, exclusive malls and clubs and even schools conspire against social integration. Public spaces like parks and places of entertainment which encouraged social interaction in the past are less available. Separate schools divide children by social groups (Tokman and O'Donnell, eds., 1998). As O'Donnell (1998) puts it:

'The sharp, and deepening, dualism of our countries severely hinders the emergence of broad and effective solidarity. Social distances have increased, and the rich tend to isolate themselves from the strange and disquieting world of the dispossessed. The fortified *ghettos* of the rich and the secluded schools of their children bear witness to their incorporation into the transnationalized networks of modernity, as well as to the gulf that separates them from large segments of the national population.'

Social categories –as key instruments in the analysis of social stratification and social inclusion– are undergoing fundamental conceptual change. As Castañeda (1996) correctly argued, the issue today is not one of class, or ideology, or regions. It is not one of class, because the families of migrants or workers in some export sectors benefit as owners and managers do. It is not one of ideology, because ideas are now increasingly exposed and sustained by transnational events in what is a communications revolution. Nor is it a question of North against South, since the new economic situation and worldwide ideological change are blurring the divisions of the past. It goes beyond all this. Social groups are structured by occupations as they were in the past, but sectors tend to lose meaning when heterogeneity prevails and, more importantly, when people relate in a different way, culturally and economically, to national and international interests.

Bibliography

Atkinson, A.B. (1996): Income distribution in Europe and the United States, *Oxford Review of Economic Policy*, vol.12, No. 1, Oxford, U.K., Oxford University Press.

Bhagwati, J. and V. Dehejia (1993): Free trade and wages of the unskilled: Is Marx striking again?, J. Bhagwati and M. Kodsters (eds.), *Trade and Wages,* Washington, D.C., American Enterprise Institute.

Castañeda, J. (1996): *The Estados Unidos affair. Cinco ensayos sobre un "amor" oblicuo,* Mexico City, Aguilar.

ECLAC (Economic Commission for Latin America and the Caribbean) (1997a): *The Equity Gap. Latin America, the Caribbean and the Social Summit*, LC/G.1954/ Rev.1-P, Santiago, Chile. United Nations publication, Sales No. E.97.II.G.11.

——— (1997b): *Stylized Facts of Income Distribution in Five Countries of Latin America and General Guidelines for a Redistributive Policy*, Financiamiento del desarrollo series, No. 72, Santiago, Chile.

——— (1999): *Social Panorama of Latin America, 1998*, LC/ G.1892-P, Santiago, Chile.

Echeverría, R. (1985): *Empleo público en América Latina*, Investigaciones sobre empleo series, No. 26, Santiago, Chile, Regional Employment Programme for Latin America and the Caribbean (PREALC).

Filgueira, C. and C. Geneletti (1981): *Estratificación y movilidad ocupacional en América Latina*, Cuadernos de la CEPAL, No. 39, Santiago, Chile, ECLAC.

Gitli, E. (1997): *La industria de la maquila en Centroamérica. Informe para el Seminario Suregional de Empleadores de Centro América y República Dominicana*, San José.

IDB (Inter-American Development Bank) (1998): *América Latina frente a la desigualdad*, Progreso económico y social en América Latina. Informe 1998-1999, Washington, D.C.

ILO (International Labour Organization) (1992): Report of the Director-General, Decimotercera Conferencia de los Estados de América Miembros de la Organización Internacional del Trabajo, Geneva.

——— (1995): *World Employment 1995. An ILO Report*, Geneva.

——— (1996): *World Employment 1996/97: National Policies in a Global Context*, Geneva.

——— (1997a): *NEWS Latin America and the Caribbean*

1997 Labour Overview, Lima, ILO Regional Office for Latin America and the Caribbean.

——— *(*1997b): *Chile: crecimiento, empleo y el desafío de la justicia social,* Santiago, Chile, Multidisciplinary Technical Team.

——— *(*1998): *NEWS Latin America and the Caribbean 1998 Labour Overview,* Lima, ILO Regional Office for Latin America and the Caribbean.

Krugman, P. (1995): *The Age of Diminished Expectation,* Cambridge, Massachusetts, MIT Press.

Lawrence, R. and M. Slaughter (1993): International trade and American wages in the 1980s: Giant sucking sound or small hiccup?, *Brookings Papers on Economic Activity*, No. 2, Washington, D.C., The Brookings Institution.

Lustig, N. (1998): Pobreza y desigualdad: un desafío que perdura, *CEPAL* Review, special issue, LC/G.2037-P, Santiago, Chile, ECLAC.

Meller, P. and A. Tokman (1996): *Chile: apertura comercial, empleo y salarios*, Working document, No. 38, Lima, ILO Regional Office for Latin America and the Caribbean.

OECD (Organisation for Economic Co-operation and Development) (1994): Perspectivas del empleo, *The OECD Jobs study. Facts, analysis, strategies*, Paris.

O'Donnell, G. (1998): Poverty and inequality in Latin America: Some political reflections, V. E. Tokman and G. O'Donnell (eds.): *Poverty and Inequality in Latin America: Issues and New Challenges,* Notre Dame, Indiana, University of Notre Dame.

Paes de Barros, R. and others (1996): *Brasil: apertura comercial e mercado de trabalho*, Working document, No. 39, Lima, ILO Regional Office for Latin America and the Caribbean.

Pérez-Sáinz, J. P. (1996): *De la finca a la maquila*, San José, Latin American Faculty of Social Sciences (FLACSO).

Saavedra, J. (1996): *Perú: apertura comercial, empleo y salarios*, Working document, No. 40, Lima, ILO Regional Office for Latin America and the Caribbean.

Sachs, J. and H. Shatz (1994): Trade and jobs in US manufacturing, *Brookings Papers on Economic Activity*, No. 1, Washington, D.C., The Brookings Institution.

Tokman, V.E. (1997): Jobs and solidarity: Main challenges for the post-adjustment Latin America, L. Emmerij (ed.), *Economic and Social Development into the XXI Century,* Washington, D.C., IDB.

——— *(*1998): Jobs and welfare: Searching for new answers, V.E. Tokman and G. O'Donnell (eds.), *Poverty and Inequality in Latin America. Issues and New Challenges,* Notre Dame, Indiana, University of Notre Dame.

——— *(*1999): The labour challenges of globalization and economic integration, E. Mayobre (ed.), *G-24. The developing countries in the international financial system,* Boulder, Colorado, Lynne Rienner Publishers.

Tokman, V.E. and D. Martínez (1999): Costo laboral y competitividad en el sector manufacturero de América Latina, 1990-1998, *CEPAL Review*, No. 69, LC/G.2067-P, Santiago, Chile, ECLAC.

Tokman, V.E. and D. Martínez (eds.) (1999): *Flexibilización en el margen: la reforma del contrato de trabajo*, Lima, ILO Regional Office for Latin America and the Caribbean.

Tokman, V.E. and G. O'Donnell (eds.) (1998): *Poverty and Inequality in Latin America. Issues and New Challenges,* Notre Dame, Indiana, University of Notre Dame.

Williamson, J. (1990): *Latin American Ajustment: How Much has Happened?*, Washington, D.C., Institute for International Economics (IIE).

Wood, A. (1994): *North-South Trade, Employment and Inequality,* Oxford, U.K., Clarendon Press.

Employment trends in *Latin America and* the Caribbean during the 1990s

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The economic reforms applied in the region during the 1980s and 1990s created expectations, for which there was theoretical justification, of strong job creation and greater equity in the labour market. This article analyses developments in the quantity and characteristics of employment during the 1990s. It concludes that today's labour market problems are due to insufficient economic growth and to less intensive use of labour, resulting mainly from changes in tradable goods-producing activities. Modernization of production methods in companies and sectoral restructuring that increased the weight of tertiary activities contributed to segmentation of the labour market on the basis of people's level of education, as the demand for labour shifted towards those who had passed through intermediate and higher education. People with less formal education had less access to wage employment and wage differences between skilled and unskilled workers widened. At the same time, wage differences between microenterprises and larger ones increased and, with employment relationships becoming more flexible as well, employment quality indicators tended to worsen. All these tendencies were contrary to what had been expected from the reforms. Sectoral restructuring of employment helped trigger a trend towards increasing heterogeneity in the labour market, and this took a variety of forms: substantial and simultaneous job creation at the top and bottom of the employment structure, a widening of the gap between formal and informal activities, differentiation of working conditions within medium-sized and large firms, and internal differentiation among microenterprises and own-account workers.

I

Introduction

Developments in the labour market between 1950 and 1980 were characterized by a process of social participation and exclusion: while a growing proportion of the economically active population succeeded in participating in dynamic activities, large numbers of people who left the agricultural sector as a result of interlinked processes of attraction and expulsion –and of whom many migrated to the big cities– could only find employment in low-productivity, low-paid activities (PREALC, 1991, pp. 9-14). There thus arose a consensus, reached from a variety of theoretical positions, to the effect that even though open unemployment rates were fairly low on average, there were still severe labour market problems in the region. The main one identified was underemployment (visible and invisible), which affected large groups of people in small-scale farming and the urban informal sector. During the crisis of the 1980s, the problems of the labour market worsened as the ability of the formal sectors to generate productive employment declined, with most new jobs being created in the informal sector. At the same time, labour productivity and real wages fell.

The idea behind the economic reforms undertaken in the 1980s and 1990s was not just to achieve greater macroeconomic stability and higher rates of output growth, but also to solve the structural problems affecting the region's labour markets. The starting assumption was that underutilization of the labour force, at a time when "inward" growth strategies were the norm, was mainly due to distortions that had arisen in the different markets for goods and factors. The first of these distortions was taken to be an anti-export bias that favoured import substitution activities and the production of non-tradable goods and services at the expense of exports, which were more labour-intensive. Secondly, it was argued that distortions in the labour and capital markets had lowered the cost of capital and raised the cost of labour, and that this had had a negative impact on the demand for labour. Lastly, it was considered that the urban bias of this policy had relegated agricultural activities, which tend to be more labour-intensive, to a position of secondary importance. Removing these distortions from goods and factor markets would involve reallocating resources to activities that produced exportable goods and to technologies that were more labour-intensive, whereupon the demand for labour would increase. Besides this the reforms, taken all together, would have a positive effect on economic growth, an essential variable for increased job creation.

Because of the relative abundance of low-skilled workers, the bulk of the additional demand would be for labour of this type. This would increase the relative wages of low-skilled workers, which would have positive effects on distribution. Another positive development in this respect would be the strengthening of small and medium-sized enterprises, as it was argued that the existing distortions had given big firms an unfair advantage over small ones. Lastly, the abolition of certain labour regulations and measures to reduce the cost of others would be conducive to the formalization of employment conditions and would reduce the relative weight of the informal sector in employment.

During the 1980s and 1990s, reforms designed to remove distortions in the different markets of the region made considerable progress (Morley, Machado and Pettinato, 1999). So far, evaluations of developments in the region's labour markets during the 1990s have judged the results of these reforms to be disappointing.[1] A fairly common conclusion is that the labour market situation is the biggest problem facing the Latin American and Caribbean countries, and the region is often said to be experiencing "jobless growth".

☐ This article forms part of the research project "Growth, Employment, and Equity. The Impact of the Economic Reforms in Latin America and the Caribbean" conducted by ECLAC and researchers in nine countries of the region and financed by the Governments of the Netherlands and Sweden, the Canadian International Development Research Centre and the Ford Foundation.

[1] See ECLAC (1997), Thomas (1997), Lora and Olivera (1998) and Weeks (1999). ILO publications also stress the weakness of job creation, in terms of both quantity and quality, but note that the countries which implemented the reforms earliest have seen better results; see, for example, ILO (1999b).

II

General developments in labour markets during the 1990s

This section will describe some general tendencies in the region's labour markets during the 1990s, after which it will detail some aspects that reflect the high degree of heterogeneity between countries. The objective is to evaluate the labour market in relation to the expectations created by the economic reforms and the needs of the region's households.

Figure 1 shows how some labour market indicators have evolved for the region as a whole. The values given are medians, to prevent the biggest countries (in the case of weighted averages) or certain extreme situations (in the case of simple averages) having a disproportionate influence on the data. The indicators are the total participation rate (TPR), the employment rate (ER), the real average wage in the formal sector (RAW) and the real minimum wage (RMW). The number of countries for which the relevant information is available is given in brackets.

The total participation rate shows an upward trend, although not without fluctuations. By contrast, the employment rate, after rising in the early 1990s, fell markedly over the following years, and the subsequent rise through 1997 and 1998 was not enough to close the gap with the supply of labour, the result being higher unemployment rates (black lines on the chart). Furthermore, the new jobs were created to a disproportionate extent in low-productivity activities.[2] The trend in wages was somewhat more favourable, as they rose during the first five years of the decade. Subsequently, though, they stagnated owing to a high degree of economic volatility, annual growth being just over 1%, which was higher than the rate seen in the previous decade, but not by much. Thus, by the end of the 1990s a number of countries had still not managed to return to the levels obtaining in 1980 (ECLAC, 2000b, table VI.4).

As regards minimum wages, the cautious policies which had been applied in the previous decade were maintained; only during the later years were there some real increases, giving an annual rise of around half a per cent on average over the decade.

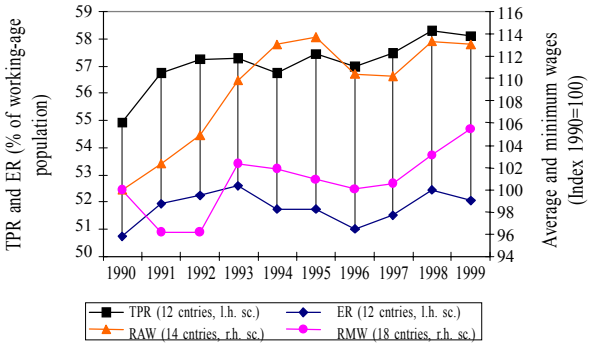
How does job creation in the 1990s look by historical standards? Table 1 shows that the rate of employment generation increased between the 1950s and the 1970s, then fell in subsequent decades. The employment-elasticity of output in the 1990s does not differ greatly from the regional average for the whole period 1950-1997. At this level of aggregation, no fundamental shift has been seen either towards greater relative use of the workforce by comparison with the long-term trends of previous decades (as had been argued in favour of the reforms) or towards lower labour-intensiveness (which was a criticism in the 1990s), and there is no justification for talking about jobless growth. Thus, the main reason (although not the only one) for the rise in open unemployment during the 1990s would seem to be the weakness of economic growth, which was not sufficient to absorb the growing supply of labour.

In simplified terms, the region's labour markets can be analysed in two segments, the first corresponding more to the dynamic of labour demand and the sec-

FIGURE 1

Latin America and the Caribbean: Employment and wages, 1990s[a]

(Medians)



Source: ECLAC (2000b) and official data from the countries.

[a] In most of the countries the participation and employment rates are for urban areas.

[2] The median figures for 12 countries have the share of urban employment provided by the informal sector rising from 43.5% to 47.9% between 1990 and 1998 (author's calculation based on ILO, 1999a).

TABLE 1

Latin America and the Caribbean: Annual growth in output and employment and the employment elasticity of output, 1950-1999

Period	Economic growth	Employment growth	Employment elasticity of output	Growth in wage employment	Wage employment elasticity of output
1950s	5.1	1.9	0.4	2.5	0.5
1960s	5.7	2.3	0.4	2.7	0.5
1970s	5.6	3.8	0.7	4.7	0.8
1980s	1.2	2.9	2.6	2.4	2.0
1990s[a]	3.8	2.2	0.6	2.2	0.6
1950s to 1990s	4.3	2.7	0.6	3.0	0.7

Source: Prepared by the author on the basis of information from ECLAC and the International Labour Organization (ILO).

[a] 1990-1997.

ond to the dynamic of supply. Because of this second dynamic, which is of great structural importance in countries that lack systems of unemployment benefit, in the long term –and when comparisons are made between countries– job creation is closely correlated with movements in supply. This is particularly true of overall employment. Thus, the employment growth shown in table 1 –rising up until the 1970s, declining thereafter– mainly reflects developments in supply, and particularly in its most important component, the demographic one, rather than differences in the use made of the labour factor by growth models of different kinds.

Simplifying once again, waged employment can be used as a proxy for developments in the segment determined mainly by demand, as it reflects the willingness of companies and the public sector to "pay a price", and own-account working can be used in the same way for the segment determined mainly by supply, as these are the main occupational categories of the respective segments. By historical standards, growth in wage employment was relatively weak (table 1). Whereas from the 1950s to the 1970s wage employment grew more quickly than employment overall, and its share of total employment rose, in the 1990s employment in this category only grew at the same rate as overall employment.[3] It fared worse only in the 1980s, when its share of total employment fell. The pressure of supply, of course, can also influence the generation of certain kinds of wage employment, particularly in microenterprises,[4] just as there is own-account employment that reflects preferences and opportunities –in respect of income or other aspects– more than the mere necessity of generating minimum incomes for survival, a necessity which is characteristic of those working in the segment mainly determined by the supply situation.

When the main labour market trends of the 1990s are analysed in greater detail, it is found that the characteristics of the labour supply in that decade did not differ sharply from previous tendencies. The increase in its demographic component continued to tail off[5] and the participation rate continued to rise, owing to the increasing numbers of women entering labour markets.[6] Thus, the total labour supply continued to grow by more than its demographic component. As for the qualitative aspects, we find that the two components of the labour supply that are generally deemed essential for the development of human resources –formal education and work experience– developed positively. On the one hand, enrolment in secondary and tertiary education increased and, as young people with more years of formal education entered the labour market, the average educational level of the workforce rose, although with major quantitative and qualitative shortcomings

[3] Relative growth in wage employment would be weaker if the information for 1998 and 1999 were included, as in both years wage employment grew more slowly than the other employment categories taken together (see the relevant volumes of the ECLAC *Economic Survey of Latin America and the Caribbean*).

[4] The fact that job creation in the 1980s was low in relative terms, but higher than in the 1990s in absolute terms, shows that in situations of economic crisis too waged employment reflects the pressure of supply to a great extent. In fact, most waged employment was generated in microenterprises.

[5] Annual growth in the working-age population fell from 2.5% in the early 1980s to 2.0% in the late 1990s (author's calculation based on ECLAC/CELADE, 1999).

[6] See ECLAC (2000b, statistical annex) for the way labour market participation developed differently by sex.

TABLE 2

Latin America and the Caribbean (17 countries): Annual employment growth by occupational category and contribution of categories to job creation, 1990-1997

Occupational category[a]	Annual growth		Contribution to new jobs	
	Weighted average	Median	Weighted average	Median[b]
Wage earners, total (17)	2.2	2.7	51.8	62.1
Private-sector wage earners (13)	2.2	3.2	49.7	52.6
Public-sector wage earners (13)	0.7	0.6	2.0	2.5
Own-account workers (17)	2.8	3.1	35.9	34.2
Domestic service (13)	3.9	3.5	9.9	3.9
Unpaid workers (15)	0.4	-1.9	1.7	-0.5
Other categories (17)	0.4	0.5	0.6	2.4
Total (17)	*2.2*	*3.4*	*100.0*	*100.0*

Source: Prepared by the author on the basis of household surveys from each country.

[a] The number of countries with information available is shown in brackets.
[b] The sum of the contributions does not necessarily total 100.

(Duryea and Székely, 1998). On the other hand, the relative reduction in the size of the younger cohorts within the working-age population translated into a rise in average levels of work experience. In conclusion, most of the main quantitative and qualitative features of the labour supply were determined by long-term tendencies, with no sign of changes occurring in reaction to recent events such as the economic reforms. The only indicator that can reflect short-term reactions –and in fact does so throughout the cycle– is the participation rate, the trend in which, however, does not show any kind of abrupt change in direction.

The relative weakness of the demand for labour can be appreciated from table 2, which breaks down employment growth over the period 1990-1997 into the different occupational categories for the region as a whole.

Across the region, employment grew at an annual rate of 2.2%.[7] Employment in certain categories where working conditions and earnings are generally poor, such as own-account work and domestic service, grew by more than waged employment. Among wage earners, public-sector employment grew by less than total employment, owing to privatization and more restrictive fiscal policies. The number of unpaid family workers remained stable, which meant that their relative weight in the employment structure continued its long-term decline, mainly owing to the relative contraction of the family farming sector. Wage earners accounted for around half of all new employment (somewhat more in the median) and own-account workers for another third. Figure 2 shows the link between changes in the economic growth rate and changes in wage employment and wages, for four countries.[8]

Developments at the sectoral level were an important factor in accounting for both the quantity and the characteristics of job creation. During the 1990s the long-term tendencies for employment to fall in the primary sector and grow in the tertiary sector continued, while the relative expansion of employment in the secondary sector seems to have come to an end (table 3).

Between 1990 and 1997, manufacturing employment grew at an annual rate of 1.3%. In the medium-sized and large countries, stagnation or even contraction of manufacturing employment in Argentina, Brazil and Colombia contrasts with substantial growth in Mexico. Agricultural employment declined even in absolute terms, so that the existing downward trend in the relative employment share provided by this sector intensified.

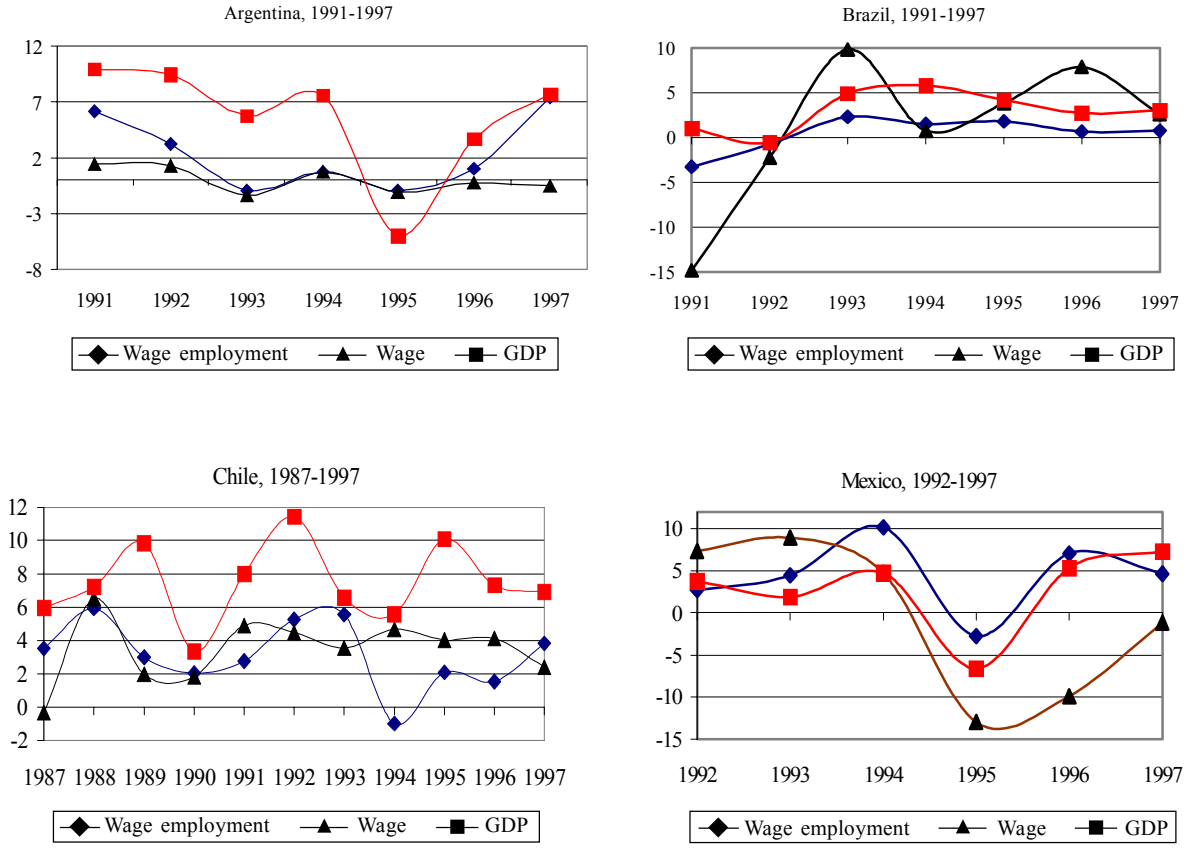
Construction, which is very labour-intensive and highly sensitive to the economic cycle, accounted for almost 10% of all new employment in the region. It was in the different branches of the tertiary sector, however, that the most dynamic developments were seen in terms of job creation. On the one hand, particularly

[7] The 2.9% annual employment growth cited in other publications for the same period (ILO, 1998b; ECLAC, 2000a, p. 75) is for non-agricultural employment only.

[8] Econometric estimates carried out as part of the project confirmed the importance of economic growth for job creation; see Weller (2000, chapter 4). See also Lora and Olivera (1998).

FIGURE 2

Argentina, Brazil, Chile and Mexico: Growth in wage employment and real wages in the formal sector



Source: Prepared by the author on the basis of ECLAC information.

strong growth occurred in some areas associated with the transformation of the region's economies, particularly financial services, insurance, business services and real estate and basic services (electricity, gas and water; transport, storage and communications). On the other hand, the branch comprising trade, restaurants and hotels contains both activities that were very dynamic during the 1990s (large stores and supermarkets, foreign trade, tourism) and typical informal trading. A high degree of heterogeneity also characterizes social, community and personal services. Across the region, the latter two branches accounted for around 70% of the jobs created in the 1990s.

An important factor behind employment trends was the fairly general rise in female participation in the labour market (see the last column of table 3). This rise occurred in sectors with a traditionally high level of female involvement (services, trade and, to a lesser extent, manufacturing industry) but also in sectors where this involvement is generally low. Furthermore, it was seen both in branches that did not generate strong employment growth in the 1990s and in the sectors that accounted for the bulk of such growth. The only exception was basic services, owing to the large rise in employment in transport services, where most jobs are held by men.

The new employment created in the 1990s has hastened the tendency, dating from previous decades, for the importance of the tertiary sector in the employment structure to increase. Towards the end of the decade, tertiary activities accounted for over 50% of employment in 12 of the 14 countries for which nationwide information is available; in three countries, the figure was over 60%. In 1997, in the region as a whole, 54.9% of those in work were employed in tertiary activities.[9]

[9] Includes basic services.

TABLE 3

Latin America and the Caribbean (17 countries): Growth and contribution to new employment by branch of activity, 1990s
(Percentages)

Branch of activity[a]	Annual growth			Contribution to new employment		Change in female employment share[d]
	Value added[b]	Employment		Weighted average	Median[c]	
		Weighted average	Median			
Agriculture (13)	2.5	-0.6	-1.2	-7.0	-6.0	0.9
Manufacturing industry (17)	3.5	1.3	1.3	8.7	6.8	1.6
Construction (17)	4.2	3.0	4.2	8.6	8.6	0.3
Trade, restaurants and hotels (17)	3.8	4.0	5.7	32.3	34.2	0.5
Financial services[e] (15)	3.4	6.6	7.8	10.8	11.0	2.6
Basic services[f] (17)	5.8	4.8	4.8	12.6	7.6	-1.1
Social, community and personal services (17)	2.2	2.9	2.8	37.2	31.8	0.9
Others (17)	...	-3.0	-2.7	-2.9	-0.1	n.d.
Total (17)	*3.8*	*2.2*	*3.4*	*100.0*	*100.0*	*1.5*

Source: Prepared by the author on the basis of official figures from the countries and data from ECLAC and ILO (1998a).

[a] The number of countries for which information is available is given in brackets.
[b] Figures are for 31 countries in the region; the 17 countries for which information was available on employment growth accounted for 98.3% of regional GDP in 1995.
[c] The different contributions do not necessarily add up to 100.
[d] In percentage points; median for 13 countries.
[e] Includes financial services, insurance, business services and real estate.
[f] Includes electricity, gas and water, and communications, transport and storage.

The decline in agricultural employment accelerated as well. In previous decades this had grown more slowly than employment generally, but in the 1990s it actually declined in absolute terms in 8 of the 13 countries for which information is available, and in the region as a whole, so that the share of the sector in regional employment fell to 23.6%. Towards the end of the decade, manufacturing employment accounted for only 13.5% of total employment in the region, while construction contributed a further 6%.

Developments in employment were matched by developments in labour productivity. After falling sharply in the previous decade, average labour productivity rose again in the 1990s, although as of 1997 it had not returned to the 1980 level.[10] If growth rates for employment and value added are compared at the sectoral level (table 3), it is found that in the sectors mainly encompassing tradable goods production activities –the primary and secondary sectors– productivity rose, but employment barely did so, while in the tertiary sector, consisting mainly of non-tradable activities, employment rose, but not productivity. This is due to the fact that the increased involvement of the region in global markets was not based, as had been expected, on factor use reflecting its relative abundance of labour and capital. Many increasingly integrated markets are governed by standards of competitiveness whose parameters are largely defined by labour-saving technologies. Meanwhile, in the case of products for which competitiveness is "basic factor driven", to use the terminology of Porter (1990), and for which it is very important to have a large, relatively low-skilled workforce available, there are apparently other regions which have the edge over Latin America.[11] Develop-

[10] In the two-year period 1998-1999 average labour productivity fell again.

[11] See Wood (1997). Some countries in the north of the region (Mexico and countries in Central America and the Caribbean) have apparently escaped, at least in part, from a situation in which competitive pressures come both from above and below. Although the tendencies referred to have not been absent there, increasing integration with the North American market (as a result of geographical proximity and special trading conditions) has enabled labour-intensive activities to expand (inbond assembly plants, certain agricultural products).

ments in sectoral productivity are also indicative of a poor capacity to generate productive employment, since they suggest that many of the new jobs have arisen in low-productivity activities in the tertiary sector.[12]

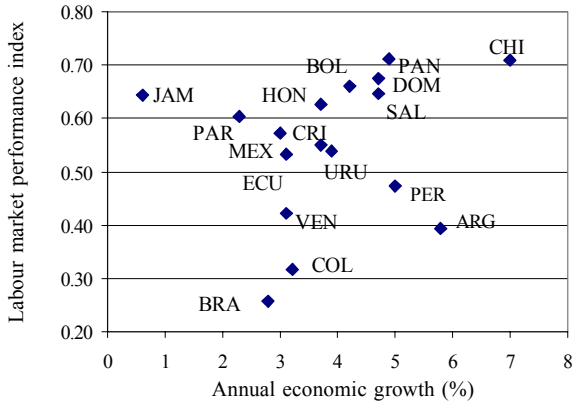
Given this situation in the region as a whole, note should be taken of the great diversity of the results obtained for the different countries making it up. Table 4 shows these results for 17 countries, summarizing the changes in five variables: the unemployment rate, the employment rate, the average real wage in the formal sector, labour productivity and, lastly, the relationship between waged employment growth and total employment (as an indicator of the relative strength of demand for labour).

Large differences are seen between the countries, with a relatively favourable performance in Chile, the Dominican Republic, El Salvador and Panama and, to a lesser extent, in Costa Rica, Mexico, Peru and Uruguay, and an unsatisfactory performance in Argentina, Brazil, Colombia, Paraguay and Venezuela.[13] Economic growth played a very important role in these results, as can be seen in figure 3, which is based on an index designed to quantify the data for the 17 countries in the 1990s in relation to the first four variables of table 4.[14] Indices were calculated for each variable and a value of between 0 and 1 was assigned to them for the different countries, depending on the gap between them and the best-performing (1) and worst-performing (0) country. An average of these five indices was then taken in order to calculate the labour market performance index.

The countries that do not show this close correlation between economic growth and the labour market performance index are, on the one hand, Argentina and Peru, where the reforms implemented with great speed at the beginning of the decade had a negative impact on several aspects of the labour market and, on the other, Jamaica, where the result has been better than expected, thanks to relatively strong private-sector wage employ-

FIGURE 3

Latin America and the Caribbean (17 countries): Economic growth and labour market performance, 1990s



Source: Prepared by the author on the basis of ECLAC information and official data from the countries.

ment growth in tertiary activities, higher real wages and the stabilization of unemployment, albeit at a high level.

Some of the countries that applied the reforms earliest (Bolivia, Chile, Costa Rica) are among the countries that have a relatively good labour market track record, although without departing from the trend. This agrees with the results of econometric exercises indicating that the economic reforms had a small positive impact on growth, something that would in turn have had a favourable impact on employment.[15] Against all expectations, however, the reforms would appear to have reduced the labour-intensiveness of economic growth, with negative consequences for job creation.[16] This process was not a transitory one, as this reduction in labour-intensiveness seems to have been maintained over the longer term. In the aggregate, trade liberalization has had a negative impact on labour-intensiveness. Lastly, a positive correlation was detected between the real exchange rate and labour-intensiveness and this, given the tendencies towards appreciation seen in the region over the greater part of the 1990s, has come to be viewed as another adverse influence on the demand for labour.

Thus, the apparent contradiction between the negative impact of the reforms on employment, as identified in most studies, and the more favourable developments detected by ILO (1999b) in the labour markets of the countries that reformed early, can be accounted for by the better economic growth in these countries, while

[12] Before 1980 the tertiary sector was the biggest source of new jobs, but in a context of rising labour productivity. According to ILO calculations, in the 1990s six out of every 10 new jobs in urban areas were created in the informal sector (ILO, 1999b).

[13] See ECLAC (2000b, chapter 6) for details of changes in the level of unemployment, average wages and minimum wages in the individual countries.

[14] Labour productivity was excluded to avoid the apparent correlation that would arise if the economic growth variable were incorporated into the values for both axes of the chart. Consequently, the relative positions of the countries are not exactly the same as shown in table 4.

[15] See Stallings and Peres (2000), also IDB (1997).

[16] See Weller (2000, section 4.2).

TABLE 4

Latin America and the Caribbean (17 countries): Changes in labour market indicators in the 1990s[a]

Country and threshold year for reforms	Unemployment	Employment level	Waged employment	Real wages	Labour productivity
Argentina, 1990	-	-	+	=	+
Bolivia, 1986	+	+	-	+	-
Brazil, 1989	-	-	=	+	+
Chile, 1974	+	+	+	+	+
Colombia, 1992	-	=	-	+	+
Costa Rica, 1987	=	+	=	+	+
Dominican Republic, 1991	-	+	-	+	=
Ecuador, 1992	+	+	+	=	+
El Salvador, 1990	+	+	=	-	-
Honduras, 1992	=	-	+	+	-
Jamaica, 1991	-	+	+	+	=
Mexico, 1989	+	+	+	+	+
Panama, n.a.	-	+	-	+	-
Paraguay, 1990	=	+	-	+	+
Peru, 1991	+	=	+	+	+
Uruguay, 1979	-	+	=	+	+
Venezuela, 1991	-	+	-	-	-

Source: Prepared by the author.

[a] The threshold years for the reforms are the years in which the reform index, as calculated by Morley, Machado and Pettinato (1999), rose the most. Labour market performance was assessed on the basis of changes between the beginning of the 1990s and 1998 (1997 in some cases). + means a positive change, - means a negative change, = no change or very small change. Column 1: Percentage change in the unemployment rate. Column 2: Change in the employment rate, in percentage points. Column 3: Growth in waged employment compared with overall employment growth. Column 4: Percentage change in the average real wage in the formal sector. Column 5: Percentage change in average labour productivity.

in the others the decline in labour-intensiveness led to more negative results.

In conclusion, it can be said that job creation in the 1990s was disappointing, both by comparison with the 1950s, 1960s and 1970s (relatively little creation of wage employment) and in relation to what was expected of the reforms in terms of the rate and sectoral composition of job creation and to the needs of households (rising unemployment being evidence of this), although with major differences between countries. The underlying reasons were weak economic growth and low demand for labour in branches producing tradable goods, in a context of integration with international markets.

III

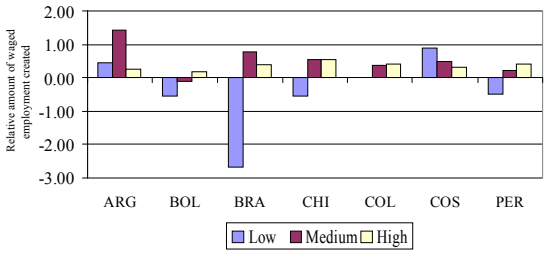
The bias of labour demand

As was seen earlier, one theoretical justification for the reforms was the argument that changes in the production structure and in the different sectors would foster demand for unskilled labour, owing to the relative abundance of this factor in the countries of the region, and that this in turn would be instrumental in reducing wage differences between high-skilled and low-skilled workers. These expectations seemed to be borne out in the 1980s, when the gap between the average wages of people with a university education and those with primary education lessened in most of the countries of Latin America and the Caribbean (Psacharopoulos and Ng, 1992, p. 15).

A number of studies dealing with the case of Chile, however, have raised doubts as to whether these tendencies can continue beyond the reform stage in a context of greater economic growth.[17] In fact, if the improved educational level of the working-age population is compared with that of people in work it is found that in most of the countries groups with medium-high (between 10 and 12 years of study) and high (13 years of study and over) levels of education saw their share in employment grow by more than the proportion of the whole working-age population they accounted for; the opposite occurred in the case of groups with lower levels of education (Weller, 2000, table 6.1). This differentiation in the employment structure by educational level appears to provide initial confirmation that during the 1990s the demand for labour was oriented towards skilled workers and not towards unskilled ones.

If this orientation exists, it should be reflected by differences between educational levels in the creation of wage and non-wage employment. Since wage employment gives the truest picture of the demand for labour, differences of this type would show that the higher growth in employment for skilled workers really was due to demand preferences. Figure 4 illustrates this aspect. It shows, for seven countries, the different proportions of new employment accounted for by waged and unwaged jobs in respect of three educational groups, divided, for reasons of standardization, by the share of the new employment taken by the entire educational group. This indicator can be interpreted as representing the relative demand from companies for the different educational groups in the workforce. A positive value means that wage employment accounted for more of the new employment taken up by the educational group concerned, while a negative value means that non-wage employment accounted for more.

FIGURE 4
Latin America (seven countries): Relative demand for labour by educational level



Source: Prepared by the author.

As can be seen, in Bolivia, Brazil, Colombia, Chile and Peru there is a fairly strong positive correlation between educational level and the relative demand for labour by companies. The exceptions are Argentina and Costa Rica. In Argentina, the group with the lowest level of education saw a decline in the absolute numbers of both wage earners and unwaged workers, so the positive value does not mean that companies have a preference for this group of workers. Only in Costa Rica was there strong relative demand for workers in the lowest educational segment.

During the 1990s, segmentation of the labour market by educational level generally became more acute: while demand was skewed towards workers with more years of education, workers with less schooling had greater difficulty in finding wage employment and a higher proportion of them worked in non-wage occupations.

What is the source of this rising demand for highly skilled staff? To identify it, changes in wage employment were broken down with a view to distinguishing between the contribution made by changes *within*

[17] For the case of Chile in particular, Robbins (1994 and 1996) identified a tendency for wage differentials to rise.

branches of activity on the one hand and, on the other, the contribution of changes *between* branches of activity (table 5). To this end, the following calculation was carried out in respect of people with a high level of education (13 years and over):[18]

$$\Delta S = \sum_{i=1}^{n} \Delta A_i \bar{S}_i + \sum_{i=1}^{n} \Delta S_i \bar{A}_i$$

for $i = 1...., n$ branches of activity

where:

S = highly educated staff as a proportion of all those in wage employment
S_i = proportion of highly educated staff in branch of activity i
A_i = wage employment in branch i as a proportion of all wage employment

In the equation, the strokes indicate averages of the relevant values for the beginning and end years. Thus, the first term on the right-hand side of the equation captures the contribution of changes between branches (i.e., the differences in respect of wage employment growth), while the second term captures the contribution of changes within the branch (i.e., changes in the share of wage employment in that branch accounted for by highly qualified staff).

In the median for eight countries, the share of highly qualified staff in waged employment rose by 2.3 percentage points. As the first part of table 5 shows, the greatest contribution to this increase was made by changes within branches.[19] Changes between branches, however, were also important: the shift in employment towards activities that use more highly skilled labour and a decline in the employment share of branches that, generally speaking, require lower skill levels.

[18] Adapted from Berman, Bound and Griliches (1994).
[19] The median was chosen rather than the simple average to prevent atypical cases having too great an impact on the result.

TABLE 5

Latin America (eight countries): Contribution of changes within and between branches of activity to changes in the wage employment shares of educational groups, 1990s
(Percentage points, medians[a])

	Within branch	Between branches	Total[b]
A. Wage earners with a high level of education (13 years and over)			
Total	*1.64*	*0.63*	*2.27*
Agriculture	0.02	-0.03	-0.01
Manufacturing industry	0.05	-0.15	-0.10
Electricity, gas, water	0.01	-0.02	-0.01
Construction	0.01	-0.01	0.00
Trade, hotels and restaurants	0.19	0.13	0.32
Transport and communications	0.04	0.01	0.05
Financial services, business services and others	0.23	0.45	0.68
Community services and others	1.09	0.27	1.36
B. Wage earners with a low level of education (up to 8/9 years)			
Total	*-3.45*	*-0.77*	*-4.22*
Agriculture	-0.01	-0.81	-0.82
Manufacturing industry	-0.53	-0.71	-1.24
Electricity, gas, water	-0.11	-0.03	-0.14
Construction	-0.19	-0.07	-0.26
Trade, hotels and restaurants	-0.89	0.40	-0.49
Transport and communications	-0.37	0.07	-0.30
Financial services, business services and others	-0.09	0.20	0.11
Community services and others	-1.25	0.24	-1.01

Source: Prepared by the author.

[a] A positive value represents a positive contribution to the employment share of the group concerned; a negative value represents a negative contribution.
[b] Sum of the two columns.

As regards the contribution of the different branches to the increased employment of skilled workers, the negative impact of the changes between branches is not surprising, given the decline in the share of wage employment accounted for by manufacturing industry. Internal changes within the sector, however, did not contribute significantly to the demand for highly educated staff. This confirms the results of other studies which find that changes in production methods in this sector have not (yet) resulted in a major net shift towards higher skill levels. Although restructuring has often led to cuts in low-skilled staff, skilled jobs have also gone, for example, in research and development departments (see Katz, 2000). Thus, any rise in demand for skilled personnel resulting from the introduction of new technologies has been partially offset by the elimination of other highly skilled jobs. Consequently, internal changes in the sector contributed very little to the rise in the wage employment share of highly qualified personnel. Furthermore, because the decline in the sector's contribution to wage employment meant that employment opportunities for people in this group were lost, the transformation of manufacturing industry had a negative impact on the demand for their labour.

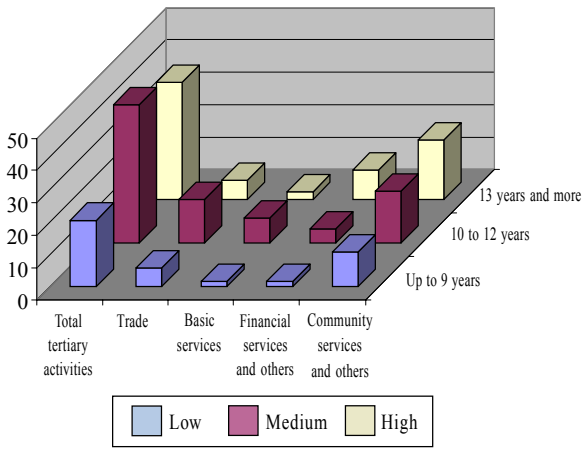
In tertiary activities, the most important sector in terms of job creation, the great bulk of new wage employment was for people with medium-high and high educational levels. Figure 5, which summarizes the characteristics of new wage-paying jobs in the tertiary sector, shows the predominance of intermediate and high education requirements.

For people in the highest category, most jobs were in financial services, insurance, real estate and business services and community, social and personal services. By contrast, in the area of trade, restaurants and hotels and in basic services (mainly because of transport) most demand was for people with an intermediate level of education. Employment for less well qualified people was created in the branches of trade, restaurants and hotels and community, social and personal services. Thus, it was in these last two branches that the greatest diversity of wage employment was seen, with new jobs being created across the entire educational spectrum. By contrast, the two branches most closely associated with the modernization process –basic services on the one hand, and financial services, insurance, real estate and business services on the other– created very few jobs for less well educated people, as most new employment was for those with an intermediate level of education, in the first case, and a high level, in the second.

FIGURE 5

Latin America (eight countries): Composition of new waged jobs in tertiary activities by educational level and branch

(Simple averages)[a]



Source: Prepared by the author.

[a] Simple averages for eight countries.

Tertiary activities shifted the demand for labour towards higher skill levels, either because their organizational or technological characteristics required this or because, as the education level of the active population rose, the most highly qualified people were recruited, even if this was not strictly necessary. The transformation of the tertiary sector was the main reason both for the increase in the number of highly qualified people within the different branches of activity –which was largely responsible for the rise in the proportion of highly qualified people in waged employment– and for the increases resulting from the changes between branches. This contradicts the theory that, thanks to trade liberalization, technological change and investment in machinery and equipment, it was primarily the sectors producing tradable goods that drove modernization and improvements in the quality of the employment structure (Lora and Olivera, 1998, p. 22).

It is generally assumed that there is a high degree of complementarity between capital and skilled labour. Consequently, the tendency for labour demand to shift towards more highly qualified people would be expected to coincide with greater capital-intensiveness (K/L). Morley (2000), however, did not find that capital-intensiveness had increased in the 1990s. Because the K/L ratio is lower in many tertiary activities than in secondary ones (which does not mean that there is not a high ratio in certain branches, particularly basic ser-

vices), the rise in the demand for well qualified staff was not reflected in greater capital-intensiveness. In manufacturing industry, the trend seen so far has been for the proportion of skilled personnel to increase, although this is largely the result of cuts in less highly skilled staff.

When the same calculation was used to break down the decline in the share accounted for by personnel with relatively low levels of education, i.e., up to 8 or 9 years of schooling, it showed the data available (table 5, part B), that this decline was also due mainly to internal changes in the different branches. Around 80% of the 4.2 percentage point drop in this group's share of waged employment can be attributed to changes of this type. This shift was largely due to the changing composition of the labour supply (withdrawal of older people with lower levels of education). Most of the fall in wage employment among people with a low level of education as a result of changes within branches was concentrated in tertiary activities; this would seem to be the corollary of the improvement in the employment structure referred to earlier. Changes in manufacturing industry also made a large contribution. Since in this case there were no net increases in the number of highly qualified staff, it would seem that, in many countries, labour force restructuring in this sector during the period analysed mainly meant the shedding of low-skilled staff, unaccompanied by any major process of improvement in the quality of jobs. This bout of employment restructuring seems to have been part of a stage in which companies relied heavily on defensive strategies, with a view to improving competitiveness without major investment (Moguillansky and Bielschowsky, 2000), when generally speaking the qualification levels of human resources are given only a low priority (Palomares and Mertens, 1993).

As regards changes between branches, the decline in the wage employment share of agriculture and manufacturing industry, two of the branches that have traditionally employed mainly low-skilled labour, meant a loss of jobs where this group was concerned.[20] Meanwhile, despite the bias towards highly qualified people in the labour demand of the tertiary sector, the expansion of some tertiary activities created new jobs for people with a lower level of education as well (figure 5).

Taken all together, developments in the main tradable goods branches, which have traditionally provided much of the wage employment available to people of a lower educational level, must be held responsible for almost half the decline in this group's share of wage employment (particularly because of the fall in the share of these branches in total wage employment), while tertiary activities, which have typically employed less labour from this group, must be held responsible for the other half, owing to the increase in the level of education required of the workforce.

IV

Tendencies towards heterogeneity and insecurity of employment

The reforms were expected to make labour markets more homogeneous by reducing wage differentials between workers with different education levels, improving the relative position of small enterprises and microenterprises and boosting formal employment.

1. Wage differences by education level

Since labour demand has been shown to have a bias towards more highly qualified personnel, it is not surprising that the data confirm the findings reached by other authors to the effect that wage differentials in most of the countries have recently widened.[21] In six out of eight countries studied, the difference between the average wage and the pay received by working people with some university education increased to a greater or lesser degree, while the gap between the latter and the wages of a reference group with around eight years of schooling increased by even more (table 6). The only exceptions were Brazil and Costa Rica. This means that differentiated demand for labour more than offset the

[20] This was not the case in another branch that is a traditional employer of this stratum of the workforce, the construction industry.
[21] See, for example, Robbins (1996) and Lora and Olivera (1998).

TABLE 6

Latin America (eight countries): Relative pay by educational level, 1990s

Country and period[a]	Pay of those who have attended university relative to average		Pay of those who have attended university relative to those with 7 to 9 years of education[b]	
	Year 1	Year 2	Year 1	Year 2
Argentina, 1991-1997	164.3	169.6	218.3	227.9
Bolivia, 1989-1996	235.0	292.9	251.8	506.4
Brazil, 1992-1997	380.2	383.5	553.2	553.3
Chile, 1990-1996	231.6	247.9	366.1	448.6
Colombia, 1988-1995	222.2	261.6	276.7	327.2
Costa Rica, 1990-1996	285.0	273.2	323.1	316.7
Mexico, 1991-1997	182.1	232.1	160.1	302.2
Peru, 1991-1997	220.7	275.0	321.0	403.1
Median	226.9	267.4	298.9	365.2

Source: Prepared by the author.

[a] The data are for national totals, except in the case of Argentina (urban areas), Bolivia (departmental capitals and El Alto) and Brazil (six metropolitan areas).

[b] In Argentina the reference group is those with complete primary education, in Bolivia those with complete intermediate education (basic plus five years) and in Mexico those with complete secondary education (primary plus six years).

impact of the educational improvements in the labour supply which took place during this period.

One factor which reinforced the tendency for differences to widen was minimum wage policy. This was conservative in most of the region's countries, so that a growing gap developed between the real minimum wage and the real average wage in formal companies.[22] There is also a great deal of evidence to show that wage differences increased in fairly formal, sizeable companies.[23] This may have been contributed to by the decline in union negotiating power, a tendency that was quite widespread in the region over the last period.

In the countries where wage differences widened, wage earners with lower levels of education received a lower than average share of real wage increases or lost more in cases where wages declined (table 7). The data are not comparable between countries, as they reflect different stages in the economic cycle. In Brazil, for example, real wages began to recover in 1992 after a large drop, and only in 1996 did they return to 1990 levels (ECLAC, 2000b, table VI.4). By contrast, the fall in wages in Mexico largely reflected the impact of the 1994-1995 crisis. Nonetheless, the data given in the table provide an interesting picture of the way the wages received by groups with different levels of education evolved. In Bolivia and Peru the average wages of the lowest educational groups virtually stagnated, and only the high groups (Bolivia) or the medium and high ones (Peru) saw their pay increase. In Chile, real wages rose for all groups, but here again there were marked differences between different levels of education. It is interesting to note that in these three countries the lowest educational group (0 to 3 years of schooling) did better than the groups immediately above. The reason for this may lie in wage policies, as all three countries raised the minimum wage by more than the average wage in the relevant periods.

As was seen earlier (table 6), in Colombia and Mexico, as in the countries just mentioned, wage differences widened in the periods concerned. In these cases, the cause was a drop in the average wage which affected groups with low levels of education more than those with higher levels. As mentioned earlier, in two countries, Brazil and Costa Rica, wage differentials did not rise. In Brazil, wages rose strongly across the board, while in Costa Rica all strata –with the exception of the group with the least education– received a very small, but evenly spread, rise in real pay.

In conclusion, it can be said that in most of the countries, groups with low and medium-low levels of education shared only to a small extent in wage increases, or lost out more in cases where the general wage situation deteriorated. In some cases, active wage policies seem to have mitigated this tendency for the group with the least schooling.

[22] For information on changes in average and minimum wages, see ECLAC (2000b and previous years).

[23] See Saavedra (1999) on formal companies in Peru, Ramírez and Núñez (2000) on manufacturing industry in Colombia and Weller (2000) on manufacturing industry in Mexico and formal companies in Chile.

TABLE 7

Latin America (seven countries): Annual change in real pay by educational level, 1990s
(Percentages)

Country and period[a]	Years of study[b]						
	0 to 3	4 to 6	7 to 9	10 to 12	13 to 15	16 and over	Total
Bolivia, 1989-1996	0.6	-0.1	-0.8	1.0	8.0	5.6	3.2
Brazil, 1992-1997	5.6	6.2	7.6	6.4	5.4	7.6	7.4
Chile, 1990-1996	3.3	1.1	2.0	3.7	4.1	5.5	4.3
Colombia, 1988-1995	-5.8	-2.9	-1.3	-0.8	0.1	1.1	-1.3
Costa Rica, 1990-1996	-0.7	0.7	1.0	1.0	1.0	0.6	1.3
Mexico, 1991-1997	-7.4	-6.4	-10.6	-2.7	-1.3		-5.3
Peru, 1991-1997	1.1	-1.3	3.1	2.7	4.3	7.1	3.2

Source: Prepared by the author.

[a] The data are for national totals, except in the case of Argentina (urban areas), Bolivia (departmental capitals and El Alto) and Brazil (six metropolitan areas).

[b] The categories for Bolivia are: i) incomplete basic and less; ii) complete basic; iii) up to complete intermediate; iv) middle and middle technical; v) college of education, incomplete higher technical, incomplete university; vi) complete higher technical and complete university. The categories for Chile are: up to 3 years, from 4 to 7, 8, from 9 to 11, 12, 13 and over.

2. The difference between microenterprises and larger firms

In the 1980s, real wages generally fell by more in the formal sector than in microenterprises, so that wage differences between the two types of firm tended to decline (table 8).

In the 1990s, wage differences between microenterprises and formal companies apparently began to increase again in most of the countries (table 8). What seems to underlie this tendency is the strategy followed by many larger firms of reducing employment to lower costs, as this, in a context of substantial productivity growth, led to wages rising in formal activities. By contrast, microenterprises created a large proportion of all new jobs, but had little scope for improving working conditions, and more specifically wages.

Despite the increase in the wage differential between microenterprises and larger companies (which reflects a widening productivity gap), activities requiring appreciable levels of skill have also been developed in smaller units. This shows that the growth of microenterprise has not been based solely on the proliferation of survival units, but that very small establishments with a far from negligible level of technology and human capital have come into being, and these are benefiting from the opportunities being opened up by new technologies for smaller enterprises (Weller, 2000, section 6.D).

3. Wage differences between men and women

In all the countries studied there is a wage differential between men and women, both at the different educational levels and overall. During the 1990s this difference fell in all the countries (table 9). In some cases (Bolivia, Colombia and Mexico) this result was partly due to a large influx of highly educated women into the labour force, leading to a rise in educational standards among the female workforce that not only outstripped the corresponding rise among men, but also reinforced the tendency for highly educated women to account for a larger proportion of female wage employment than highly educated men of male wage employment. This difference is largely accounted for by the difficulties that are faced by many less well educated women, who generally have fewer economic resources, if they wish to work for a wage, particularly if they are mothers.[24] The disproportionate expansion of employment in tertiary activities was a factor that encouraged the entry of highly educated women into the labour market.[25] Their participation in these branches has traditionally been above the average, and during the 1990s it increased yet further in many countries. Furthermore, the growth of

[24] Because of this, labour force participation tends to be much more sharply polarized between women of low and high educational levels and economic strata than in the case of men; see Jiménez and Ruedi (1998).

[25] See ECLAC (1998) and Marinakis (1999). Although the proportion of women working in the informal sector is higher than that of men, the shift towards informal working in the 1990s affected women slightly less: between 1990 and 1998 the percentage of women working in the informal sector in urban areas rose from 49.2% to 52.0%, while for men the proportions were 41.1% and 45.0% (ILO, 1999a, p. 58).

TABLE 8

Latin America (seven countries): Ratio between wages of workers in companies of different sizes, urban areas, 1980s and 1990s

Country	Period (first year, intermediate year and last year)	Ratio between the wages of non-professional, non-technical workers in establishments of up to 5 people and in those of more than 5 people		
		1980s	Early 1990s	Mid-1990s
Argentina[a]	1980-1990-n.d.	1.3	1.3	n.d.
Bolivia	1989-1992-1997	1.4	1.2	1.4
Brazil[b]	1979-1990-1996	1.6	1.4	1.6
Chile[a]	n.d.-1992-1996	n.d.	1.3	1.7
Costa Rica	1981-1990-1997	1.5	1.4	1.5
Mexico[ac]	n.d.-1991-1997	n.d.	1.7	2.3
Peru[c]	1985-1994-1997	2.1	2.0	2.3

Source: Prepared by the author on the basis of ECLAC (several years).

[a] Includes public-sector wage earners.
[b] The comparison is between the average wages of workers with and without employment contracts.
[c] Includes professional and technical workers, national total.

TABLE 9

Latin America (eight countries): Changes in the position of women in the workforce, by qualification level and relative pay, 1990s[a]

Country and period	Share of waged female employment held by women who have attended university		Male/female wage (%)		Change in the male/female wage difference between year 1 and year 2 (%)		
	Year 1	Year 2	Year 1	Year 2	4-6 years of education	7-9 years of education	16 years and more
Bolivia, 1989-1996	17.9	23.0	137.3	125.0	n.d.	n.d.	n.d.
Brazil, 1992-1997	16.9	18.1	140.9	128.2	-13.5	-4.4	-13.3
Chile, 1992-1996	34.6	34.7	132.8	127.5	-17.6	+3.1	-8.2
Colombia, 1988-1995	14.8	18.8	167.6	133.1	-23.6	+9.2	-10.4
Costa Rica, 1990-1996	18.3	23.3	121.6	120.8	+0.5	-4.9	-17.2
Mexico, 1991-1997	14.6	19.2	137.5	121.6	-8.8	-14.1	+2.0
Peru, 1991-1997	33.5	32.2	132.3	132.4	-5.1	+11.6	-20.6

Source: Prepared by the author.

[a] The data are for national totals, with the exception of Bolivia (departmental capitals and El Alto) and Brazil (six metropolitan areas).

employment in these branches was accompanied by substantial improvements in skill levels.

Apart from the fact that women's educational level increased by more than men's, the narrowing of wage differentials between the sexes at certain levels of education also appears to have contributed in some degree to the positive trend overall. Indeed, the differential between male and female wage earners who have completed university studies, which is usually the largest, generally tended to narrow in Brazil, Colombia, Costa Rica, Chile and Peru; only in Mexico did it rise slightly. A similar situation is found among wage earners with four to six years of schooling. By contrast, there was a less homogeneous trend in wage differentials between men and women with around eight years of schooling, as these increased in Colombia, Chile and Peru and fell in Brazil, Costa Rica and Mexico.

4. The quality of wage employment

Those who analyse the labour market situation in Latin America and the Caribbean are aware that it is not enough just to measure the quantity of jobs generated; there are problems of quality which cannot be over-

looked. These arise partly because many jobs are created in response to the pressure of labour supply, which forces many economically active people to accept poor working conditions as long as they can obtain an income. Other problems derive from the characteristics of demand (low levels of technology entailing low productivity) and the institutional conditions obtaining in the labour market (low levels of social protection or non-compliance with regulations).

Although surveys dealing with changes in the labour market do not all use the same indicators, the information available would seem to indicate a downward trend in quality, in terms of job stability and social security (table 10).[26] In a number of countries (Argentina, Bolivia, Brazil, Chile, Colombia) there was a fall in the number of indefinite contracts or even of wage employment with contracts; in others (Mexico, Peru) social security coverage is found to have declined.[27] The deterioration in the average quality of wage employment affected both men and women, so that the differences in employment quality between the two sexes were maintained. This deterioration was partly due to the introduction of greater flexibility into the institutional arrangements governing the labour market, the aim of which was to cope with the new market conditions (Weller, 2000, chapter 7).

TABLE 10
Latin America (eight countries): Indicators of waged employment quality, 1990s

Country and periods[a]	Indicator	Year 1	Year 2
Argentina, 1991-1997	Registered	63.2	58.8
	- men	68.8	62.7
	- women	55.7	53.1
Bolivia, 1989-1996	Permanent contract	78.8	76.7
	- men	76.0	74.4
	- women	86.5	81.7
Brazil, 1992-1997	With *carteira*	68.8	64.7
	- men	71.5	67.0
	- women	64.5	62.9
Chile, 1990-1996	With contract	82.0	76.1
	- men	82.4	77.5
	- women	81.0	73.4
Colombia, 1991-1997[b]	Permanent work	81.8	78.9
Costa Rica, 1990-1996[c]	High quality	55.6	42.6
	- men	56.0	46.5
	- women	54.7	34.3
Mexico, 1990-1997	With benefits	79.5	75.3
Peru, 1991-1997[d]	With social security	51.2	26.9
	- men	52.0	26.7
	- women	49.4	27.4

Source: Prepared by the author.

[a] The data are for national totals, with the exception of Argentina (urban areas), Bolivia (departmental capitals and El Alto), Brazil (six metropolitan areas) and Colombia (seven metropolitan areas).
[b] Total of those in work.
[c] Employment quality in Costa Rica was measured using an indicator that took into account compliance with the minimum wage law, social security affiliation and employment stability (see Montiel, 1999).
[d] Only private-sector wage earners.

[26] For a detailed conceptual and empirical analysis of employment quality, see Infante (1999), and for trends in different employment quality indicators, see ECLAC (2000b, statistical annex); regarding social security affiliation, see ILO (1999a, pp. 63 ff.).
[27] See also Tokman and Martínez (eds.) (1999).

V

Conclusions and outlook

The labour problems of the 1990s were due not to jobless growth but to weak economic growth compounded by reduced labour-intensiveness, mainly owing to transformations in tradable goods-producing activities. The demand for labour was thus restrained, while pressure from the supply side generated a high proportion of non-wage employment. This was not enough to make up for the shortage of new wage employment, so unemployment followed a rising trend to the point where, by the end of the decade, it had reached levels even higher than those seen during the debt crisis of the 1980s. The effects of the economic reforms were contradictory and unexpected: while they stimulated growth, and thus the demand for labour, they reduced labour-intensiveness.

Nor were expectations about sectoral developments in the quantity and characteristics of employment met. Modernization of production methods in companies in many branches, and sectoral restructuring that gave greater weight to tertiary activities, contributed to greater segmentation of the labour market on the basis of educational level, with the demand for labour showing a

clear preference for people with medium and high levels of education. As a result, people with less formal schooling had less access to wage employment and the wage difference between skilled and unskilled workers grew. The gap between microenterprises and bigger firms also increased and, as employment conditions became more flexible, employment quality indicators tended to worsen. All these tendencies went against the expectations vested in the reforms. The only exception to the trend towards polarization seen in the region's labour markets was the narrowing of the wage gap between men and women.

Sectoral restructuring of employment helped trigger a movement towards greater heterogeneity in the labour market. On the one hand, strong job creation took place at the top and bottom of the labour market simultaneously: while educational expectations increased and the demand for highly qualified staff grew, most new employment was actually created in lower-quality segments (informal sector). At the same time, the differences in average labour productivity and wages between microenterprises and larger firms increased, which seems to suggest that the gap between the formal and informal sectors is growing. Meanwhile, within the formal sector itself (medium-sized and large enterprises), working conditions can be seen to have become more heterogeneous, in terms both of earnings (increase in wage differences between staff with different qualification levels) and employment conditions (emergence of a divide between stable cores of workers and workers whose employment is unstable, with less secure types of contract and lower social protection). Lastly, differences have increased within the microenterprise and own-account sectors, as there is a segment of these where the employment structure is also tending to improve.

What is the outlook for labour demand and job creation at the sectoral level? The performance of the agricultural sector during the 1990s, and international experience, do not give grounds for thinking that the net negative balance of job creation is something temporary. Although new agricultural jobs will be created as crops are diversified and certain activities expanded, the characteristics of factor utilization in many dynamic activities, and the moderate growth of these, mean that there will not be many of them. Most importantly, in the majority of the region's countries much of the rural and agricultural population belongs to the poorest strata, and a great many agricultural workers can be placed in the categories of visible underemployment (seasonal work) or invisible underemployment. This means that the forces driving labour out of agriculture (particularly young people) and into non-agricultural activities are still operating; indeed, this is a worldwide trend of long standing. In most of the countries, any reversal of this trend, i.e. any increase in net agricultural employment, would be rather a manifestation of the weakness of non-agricultural sectors and the factors that make them attractive to labour than a reflection of any rise in productive employment opportunities in the agricultural sector. Progress in overcoming the problems typically affecting small-scale farming, both in actual agricultural production and in the conditions under which this is undertaken, would raise labour productivity and incomes rather than direct employment in the sector. Owing to the many linkages that would come into play, however, a transformation of this kind in the agricultural sector would have a positive effect on rural employment in other sectors.

As regards the prospects for manufacturing employment, there are grounds for hoping that in future the sector will not be characterized by jobless growth. It would seem that with the completion of the restructuring phase, during which many companies shut down while others concentrated on defensive, labour-reducing measures, many countries have left the severest and most immediate of the negative effects behind them. Improvements in productivity and competitiveness mean that many companies will be able to compete more successfully in domestic and external markets. Thus, provided the macroeconomic problems can be solved, sectoral production should be able to grow at reasonable rates, with favourable effects on employment. This is true both for the biggest firms and for small and medium-sized ones, which are generally more labour-intensive and prosper during periods of expansion.

On the other hand, global competition and the trend towards greater use of labour-saving technologies mean that the sector cannot return to being the engine of job creation that it was up until the 1970s. Competition, increasingly on a world scale, is limiting the prospects for growth in labour-intensive areas, while in others it will put steady pressure on companies to choose "first best" solutions that increasingly reduce the scope for adopting other combinations of factors. This being the case, the job creation rate of the sector will be moderate, and across the region its share of employment will continue to decline.[28] This process will be slower in

[28] This would be consistent with developments in the industrialized countries, and also in the East Asian "tigers"; see Rowthorn and Ramaswamy (1997).

the region northern countries because of the opportunities for industrial employment and investment flowing from increasing integration with the North American markets.

Given this background, it seems clear that in the future too the great bulk of new jobs will have to come from tertiary activities. The relative expansion of both output and employment in this sector is a long-term global trend. The issue here is not just that the primary and secondary sectors are generating few jobs, but that tertiary activities seem to be called upon to play a new role in the economic structure. Furthermore, the competitiveness of the sectors that have been the traditional producers of tradable goods is also coming to depend more and more on efficient integration with services of many kinds, such as technological research and development, financial and marketing systems and after-sales services. Other areas that are important to systemic competitiveness, albeit indirectly, and that are tending to expand and generate good-quality employment on a substantial scale, are education and health care. If the socio-economic structure as a whole is to be modernized, the tertiary sector needs to play a more prominent role, particularly in the field of knowledge, and to generate the appropriate employment for people with medium and high qualifications. However, the transformations now under way may also generate large numbers of tertiary jobs for people with intermediate and low levels of education, particularly in community and personal services, trade and the hotel industry, and certain business services (cleaning, catering, transport, waste treatment, etc.).

The transformations now going on complicate analysis of sectoral developments in employment, since many of the measuring instruments traditionally used are no longer so effective in capturing their effects. In sectoral analysis, the distinction between the primary, secondary and tertiary sectors is becoming increasingly blurred, and this is weakening labour market research based on the surveys commonly used. Changes to the production structure of economies and the organization of companies are having corresponding effects on the structure of employment. In many manufacturing companies, for example, we are seeing a rise in the proportion of jobs that are not directly linked with production, such as research, internal services and customer services. By contrast, the tendency for certain activities to be outsourced may lead to a statistical reduction in employee numbers and affect average labour productivity in companies that do this, even if there has been no transformation in production processes.

These processes do not just affect the measurement of employment and productivity by branches of activity; they also influence other labour measurement and analysis variables such as company size and occupational category. For example, subcontracting of individuals or services may transform the composition of occupational categories by turning the wage earners of big companies into wage earners in small or medium-sized enterprises, or into own-account workers.

In the same way, the breakdown and recomposition of production processes is leading to a production –and labour– structure that is much more heterogeneous than the old one. Specifically, the effects on job creation and employment characteristics of replacing vertically organized production processes in large companies with networks or chains that have multiple links to local and, increasingly, foreign suppliers of inputs of every kind (goods and services) are little understood in terms of their extent and characteristics, but are certainly far-reaching.

While the tendencies referred to are changing the outlook for the sectoral composition of employment in future, economic growth is the main factor underlying the level of demand for labour, and thus the relative weight of the different sectors of the labour market that are driven by demand and by supply. When economic growth is inadequate, a high percentage of tertiary employment is concentrated in informal occupations. Thus, any policy that aims to improve the labour market has to concern itself with the level and stability of this growth. Meanwhile, long-term labour market problems and the tendency for labour-intensiveness to fall mean there is a need to design instruments that can foster competitive production and the creation of productive employment simultaneously over the medium term.[29]

The tendency for wage differences to increase is likely to weaken gradually in future as the supply of labour grows in those occupations where it is currently outstripped by demand. Considering, though, that the new production norms require more intensive use of technology and human capital than the Taylorist system that has operated since the early post-war years, and that the demand for low-skilled labour would appear to be limited, there are no grounds for expecting large reductions in wage differences in the near future. Other important aspects are the forces at work in the

[29] See Altenburg, Qualmann and Weller (1999) for a discussion of measures to foster productive employment in different areas of production, along with complementary policies.

institutional sphere of the labour market, including the future role of unions, which generally have an equalizing effect on the wage structure, and minimum wage policies, which have been conservative in most of the countries, but in others have raised the wage floor for less educated workers.

Bibliography

Altenburg, T., R. Qualmann and J. Weller (1999): *Wirtschaftliche Modernisierung und Beschäftigung in Lateinamerika. Zielkonflikte und Lösungsansätze*, Berlin, Deutsches Institut für Entwicklungspolitik.

Berman, E., J. Bound and Z. Griliches (1994): Changes in the demand for skilled labor within U.S. manfacturing: Evidence from the annual survey of manufactures, *The Quarterly Journal of Economics*, vol. CIX, issue 2, No. 436, Cambridge, Massachusetts, Harvard University.

Duryea, S. and M. Szèkely (1998): Labor markets in Latin America: A supply-side story, paper presented at the seminar Employment in Latin America: What is the Problem and How to Address It?, Cartagena de Indias, Inter-American Development Bank (IDB), 15 March.

ECLAC (Economic Commission for Latin America and the Caribbean)/CELADE (Latin American Demographic Centre) (1999): *Latin America: Urban and Rural Population. Projections 1970-2025*, Demographic bulletin, year 32, No. 63, Santiago, Chile.

ECLAC (several years): *Social Panorama of Latin America*, Santiago, Chile.

_____ (1997): *The Equity Gap. Latin America, the Caribbean and the Social Summit*, LC/G.1954/Rev.1-P, Santiago, Chile. United Nations publication, Sales No. E.97.II.G.11.

_____ (1998): *Social Panorama of Latin America, 1997*, LC/G.1982-P, Santiago, Chile.

_____ (2000a): *Social Panorama of Latin America, 1999-2000*, LC/G.2068-P, Santiago, Chile.

_____ (2000b): *Economic Survey of Latin America and the Caribbean, 1999-2000*, Santiago, Chile.

IDB (1997): *Economic and Social Progress in Latin America. 1997 Report*, Washington, D.C.

ILO (International Labour Organization) (1998a): *Yearbook of Labour Statistics*, Geneva.

_____ (1998b): *Panorama laboral '98*, Lima.

_____ (1999a): *Panorama laboral '99*, Lima.

_____ (1999b): Trabajo decente y protección para todos. Prioridad de las Américas, *memoria del Director General, XIV Reunión Regional Americana*, Lima, 24-27 August.

Infante, R. (ed.) (1999): *La calidad del empleo. La experiencia de los países latinoamericanos y de los Estados Unidos*, Santiago, Chile, ILO.

Jiménez, L.F. and N. Ruedi (1998): Determinantes de la desigualdad entre los hogares urbanos, *Revista de la CEPAL*, No. 66, LC/G.2049-P, Santiago, Chile, ECLAC.

Katz, J. M. (2000): *Reformas estructurales, productividad y conducta tecnológica en América Latina*, Santiago, Chile, ECLAC.

Lora, E. and M. Olivera (1998): Macro policy and employment problems in Latin America, paper presented at the seminar Employment in Latin America: What is the Problem and How to Address It?, Cartagena de Indias, IDB, 15 March.

Marinakis, A.E. (1999): *Género, pobreza y empleo en los países del Cono Sur: interrelaciones y estado de situación*, Santiago, Chile, ILO, Multidisciplinary Technical Team.

Moguillansky, G. and R. Bielschowsky (2000): *Las reformas económicas y la inversión en América Latina: un enfoque sectorial*, Santiago, Chile, ECLAC.

Montiel Masís, N. (1999): *Costa Rica: reformas económicas, sectores dinámicos y calidad de los empleos*, serie Reformas económicas series, No. 26, Santiago, Chile, ECLAC.

Morley, S.A. (2000): *The Income Distribution Problem in Latin America*, Washington, D.C., The Brookings Institution.

Morley, S.A., R. Machado and S. Pettinato (1999): *Indexes of Structural Reform in Latin America*, Reformas económicas series, No. 12, Santiago, Chile, ECLAC.

Palomares, L. and L. Mertens (1993): Cambios en la gestión y actitud empresarial en América Latina. Un marco de análisis, *Revista de economía y trabajo*, year 1, No. 2, Santiago, Chile, Programa de Economía del Trabajo (PET).

Porter, M.E. (1990): *The Competitive Advantage of Nations*, New York, The Free Press.

PREALC (Regional Employment Programme for Latin America and the Caribbean) (1991): *Empleo y equidad: el desafío de los 90*, Santiago, Chile.

Psacharopoulos, G. and Y.C. Ng (1992): *Earnings and Education in Latin America, Assessing Priorities for Schooling Investments*, The World Bank, Policy Research Working Papers, No. 1056, Washingon, D.C., World Bank.

Ramírez, J.M. and L. Núñez (2000): *Reformas, crecimiento, progreso técnico y empleo en Colombia*, Reformas económicas series, No. 59, Santiago, Chile, ECLAC.

Robbins, D.J. (1994): Relative wage structure in Chile, 1957-1992: Changes in the structure of demand for schooling, *Estudios de economía*, vol. 21, special issue, Santiago, Chile, University of Chile, Department of Economics.

_____ (1996): *Evidence on Trade and Wages in the Developing World*, Technical papers, No. 119, Paris, OECD Development Centre.

Rowthorn, R. and R. Ramaswamy (1997): *Deindustrialization: It's Causes and Implications*, Economic issues, No. 10, Washington, D.C., International Monetary Fund (IMF).

Saavedra Chanduví, J. (1999): *La dinámica del mercado de trabajo en el Perú antes y después de las reformas*

estructurales, Reformas económicas series, No. 27, Santiago, Chile, ECLAC.

_____ Stallings, B. and W. Peres (2000): *Growth, Employment, and Equity. The Impact of the Economic Reforms in Latin America and the Caribbean*, Santiago, Chile, ECLAC/Fondo de Cultura Económica (FCE).

Thomas, J. (1997): El nuevo modelo económico y los mercados laborales en América Latina, V. Bulmer-Thomas (comp.), *El nuevo modelo económico en América Latina. Su efecto en la distribución del ingreso y la pobreza*, Mexico City, FCE.

Tokman, V. E. and D. Martínez (eds.) (1999): *Flexibilización en el margen: La reforma del contrato de trabajo*, Geneva, ILO.

Weeks, J. (1999): Salarios, empleo y derechos de los trabajadores en América Latina entre 1970 y 1998, *Revista internacional del trabajo*, vol. 118, No. 2, Geneva, International Labour Organization (ILO).

Weller, J. (2000): *Reformas económicas, crecimiento y empleo: los mercados de trabajo en América Latina*, Santiago, Chile, ECLAC/FCE.

Wood, A. (1997): Openness and wage inequality in developing countries: The Latin American challenge to East Asian conventional wisdom, *The World Bank Economic Review*, vol. 11, No. 1, Washington, D.C., World Bank.

The labour market and *income distribution* in Colombia *in the 1990s*

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This article analyses the behaviour of the Colombian labour market and the changes it underwent during the 1990s. It begins by outlining the reforms carried out in that country and summarizing macroeconomic developments and changes in the production structure in the 1990s. Then it uses data available from household surveys to analyse the dynamic of the labour market by economic sector, educational level and occupational position. After briefly describing the latest advances in research into income distribution in Colombia, it then shows the results of simulation exercises carried out to determine the effects of the changes observed in labour market conditions (sectoral structure of employment, relative wages, unemployment and labour force participation) on income distribution and poverty, both for the country as a whole and for the urban and rural sectors separately. The article concludes that the ability of the economy to generate employment has deteriorated markedly, and that this deterioration has affected lower-skilled workers most of all.

I

Introduction

In the 1990s Colombia, like other Latin American countries, was in the throes of an intense process of structural reform. On the external front, this process had elements in common with developments elsewhere in the region (trade reform and a new openness to foreign direct investment), but there were also points of difference, particularly the continuation of active external debt management. This was accompanied by moderate labour market reform and a more ambitious reform to the social security system, the latter being part of a wider move to allow the private sector to become involved in areas traditionally reserved to the State. The independence given to the Bank of the Republic (central bank) and a series of reforms designed to increase competition among financial intermediaries and improve prudential regulation and supervision were the most striking developments in the monetary and financial field. The greatest difference between Colombia and the region in general, however, was the way these economic liberalization processes were combined with substantial growth in the size of the public sector, the purpose of which was to increase the provision of social services. Despite a rise in public revenue that was also substantial, this tendency resulted in a deterioration of the fiscal position, showing how difficult it has been for the Colombian State to reconcile economic liberalization with a more active social policy.

In terms of productive activity, in the 1990s the economy grew at moderate rates and was less stable than it had been in the past, particularly as regards the behaviour of aggregate demand, while inflation gradually declined. As this process went on, those sectors that were more exposed to external competition weakened markedly and the situation in the labour market deteriorated as its composition changed, a process that was accompanied by a fall in job creation, particularly in those production sectors, such as agriculture and manufacturing industry, that were more open to international competition. This recomposition of the labour market entailed the shedding of low-skilled jobs, and this was not fully offset by the increase in the number of new jobs for more highly educated workers. This suggests that the technical changes which have taken place since the early 1990s have given greater weight to processes that are more intensive in better educated labour, while lessening the need for labour of every educational level. The changes in the labour market have had adverse effects on income distribution in urban areas, and in the country as a whole these have outweighed the beneficial effects felt in rural ones. The latter have been mainly affected by an adverse shock in the rural-urban terms of trade and the resultant crisis in commercial farming.

II

The reforms

The structural reform or economic opening process, as it is known in Colombia, began at the end of Barco's term in office and was pursued most vigorously under Gaviria (1990-1994). With some slight modifications, the Samper Government (1994-1998) deepened the reforms and the current one (Pastrana, 1998-2002) is continuing with them. The main feature of this process was the liberalization of external transactions, i.e., the trade, currency and foreign direct investment (FDI) regimes. These reforms were accompanied not just by economic growth but also by a change in the structure of the public sector and a recasting of its functions, all part of the profound reform of the State that followed the approval of a new political charter in 1991. In

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addition to these developments, mention should be made of the 1990 reform that brought a degree of flexibility to the labour market and a more ambitious reform to the social security system that took place in 1993 (Ocampo, 1998).

1. Liberalization of external transactions

Trade liberalization has had two basic components: the freeing up of imports and the signing of a wide range of integration and free trade agreements. Both the tariff reduction programme put into effect by the Barco Government in February 1990 and the more ambitious one announced a few months later by the Gaviria Government proposed a gradual reduction in tariffs (over five and three years, respectively) following rapid dismantling of quantitative restrictions on imports. However, a series of macroeconomic complications led the authorities to speed up the tariff reduction process, which culminated in August 1991. In this period of a year and a half direct controls on imports were virtually done away with, the average tariff was reduced from 44% to 12% and export incentives were cut from 19% in 1990 to 6% in 1993. To mitigate the effects of fluctuations in international prices, a price band system (variable tariffs) was adopted for agriculture. In conjunction with this, safeguard and unfair competition rules were designed, and generally moderate use was made of these over the following years.

The increased vigour of the trade integration process, meanwhile, was the result of decisions taken in 1989, when the presidents of the Andean Group (which subsequently became the Andean Community) agreed to revitalize, deepen and reorient the subregional integration process. Subsequent meetings led to an agreement, in 1991, to create a free trade zone, which was to come into force in 1992. In that year, though, it was only possible to create a free trade area with Venezuela and Bolivia, which Ecuador also joined a year later. In late 1994 a common external tariff was adopted with certain exceptions, although in practice this applies only to Colombia, Venezuela and, with numerous exceptions, Ecuador. This process was complemented by the signing of the free trade agreement with Chile in 1993 and Mexico (the Group of Three, which also includes Venezuela) in 1994, and the commencement of Andean Community-Mercosur negotiations in subsequent years, among other instances.

The main components of the capital account liberalization process were foreign exchange reform and liberalization of inward FDI. The latter process began in the late 1980s and was completed in 1990 and 1991, when all restrictions on inward FDI were abolished, except in the areas of security, toxic wastes and large-scale mining investments. At the same time, the rules governing Colombian investment abroad were also liberalized. Over the following years the country began to sign up to agreements providing mutual protection for foreign investment.

The foreign exchange reform of 1991, meanwhile, decentralized the handling of foreign currency transactions by authorizing intermediaries to carry these out without prior controls being applied by the Bank of the Republic. Nonetheless, many transactions continued to be regulated, and they still had to be channelled through financial intermediaries legally authorized to operate in the market. Where capital transactions were concerned, the ultimate use of loans (investment and foreign trade operations) continued to be strictly controlled. Only in February 1992 did it become permissible for the first time to take out short-term loans abroad to finance working capital. The foreign exchange reform of September 1993 authorized financial intermediaries to make foreign currency loans to domestic companies regardless of the use made of such credits, at the same time replacing the old regulatory system by one based on an obligation for foreign currency borrowers to lodge a deposit or reserve with the Bank of the Republic. The purpose of this was to oversee the scale and composition of capital flows.[1] The loan period after which the reserve requirement became applicable and the amount of this reserve were tightened up in 1994, eased in 1996 and tightened up again in 1997. In May of that year the country introduced a simpler system of controls on foreign borrowing, more similar to the one used by Chile throughout the 1990s, making it obligatory for a deposit to be lodged for all loans. The size of the tax implicit in this capital regime was consistently higher than in the Chilean system during the years of abundant foreign capital (an average of 13.6% and 6.4% in 1994-1998 for credits of 12 and 36 months, respectively).[2] During the crisis of the latter part of the decade the size of this

[1] For a detailed analysis of regulations applying to capital flows in the 1990s, and of the effectiveness of these, see Ocampo and Tovar (1999) and Villar and Rincón (2000).

[2] In the early months of 1997 there was also a short period during which capital flows were taxed explicitly. This was declared unenforceable by the Constitutional Court in view of the procedure used to order it (the constitutional formula of the "economic emergency").

deposit was gradually lowered, until the requirement was abolished in early 2000.

2. Growth, structural change and the redefining of State functions

The 1991 Constitution and other political decisions taken over the course of the decade had a significant impact on the structure of the State, and this changed the dynamic of the public finances. As we noted in the introduction, the way this dynamic has combined with the structural reform process sets Colombia apart from the rest of Latin America. The country's singularity lies in the fact that the process of opening up and deregulating the economy has been accompanied by an increase in the size of the State, which grew from 30% of GDP in 1990 to 38% by the end of the 1990s.

The reforms that had the greatest fiscal effect were the increase in transfers to departments and municipalities to finance higher social investment and the widening of social security coverage. It has been estimated that the 1991 Constitution and the laws that built on it (particularly law 60 of 1993, which put the new system of transfers into effect, and law 100 of 1993, which created the new social security system) permanently allocated to those ends national government expenditure equivalent to just over 4% of GDP (Ocampo, 1997). This is the main source of the overall increase in central government spending, excluding interest. Despite partial privatization, the social security reform likewise gave rise to a parallel increase in the benefits provided by the relevant public bodies.

Rapid spending growth was largely offset by higher tax revenues, owing especially to higher central government taxes, higher social security contributions and, to a lesser extent, municipal taxes. In fact, the change in the tax structure resulting from trade liberalization, which made the country less dependent on external revenue, was counterbalanced by a series of tax reforms (1990, 1992, 1995, 1997, 1998 and one currently under way in 2000) which have served to finance the higher spending, albeit only in part. Since the mid-1990s the budget deficit, particularly the central government one, has tended to increase, so that it stood at 3.9% of GDP in 1998 and 5.2% of GDP in 1999 (in the latter year it reflects the fall-off in revenue resulting from the recession). Taking the public sector in the aggregate, the deficit stood at 3.1% and 4.5% of GDP in the years referred to. This higher deficit, and the constant need to modify the country's tax structure, reflect the difficulties the Colombian State has encountered in reconciling an open economy with a more active social policy.

The growth in the size of the State was accompanied by a marked change in its structure, the main features of which were far-reaching fiscal decentralization and the opening up to the private sector of areas of the economy that had traditionally been the preserve of the State. The transfer of national revenue to the departments and, in particular, to the municipalities, has been the fastest growing component in national government outlays. Meanwhile, it is the spending of the municipalities, together with that of the social security system, that has seen the highest rate of growth in the public sector as a whole. Privatization, the franchising of infrastructure projects and the opening up in general of the infrastructure and social security sectors to private investment are the most notable developments on this second front. This process was accompanied by the creation of stronger regulatory and supervisory institutions in the infrastructure, social security and financial sectors. In all these fields, however, what the implicit model chosen entails in practice is the maintenance of a large number of public companies and organizations that complement the private sector in some fields while competing with it in others. On the financial front, it should be added that in the early part of the decade a reform was carried out with a view to increasing competition among different types of intermediaries, some of the organizations that had been nationalized during the financial crisis of the early 1980s were privatized and the sector was fully opened up to FDI. The 1991 Constitution, meanwhile, made the Bank of the Republic fully independent for the purposes of monetary and exchange rate management.

3. Labour market and social security reform

The 1990 labour market reform partially freed up the labour market while giving greater protection to union rights. The general thrust of this reform was to put into effect many of the proposals made a few years previously by the Employment Commission (Colombia, Contraloría General de la República, 1986). The most important reforms on the first front were the provisions that made temporary hiring more flexible, those facilitating dismissal for workers with more than ten years of service (in exchange for a higher redundancy payment, and subject in any event to the requirement that "just cause" be shown for the dismissal), the adoption of a wage system integrating all remuneration for higher-income workers (those earning more than

10 times the minimum wage) and the elimination of the excess costs involved in the previous unemployment regime. This social benefit provided for workers to be paid one month's wages per year of service when they left the company; however, the system for liquidating withdrawals from the worker's account meant that the cost rose rapidly as years of service increased. The reform replaced this system with one that obliged new workers to pay into unemployment funds and that enabled companies to negotiate with existing workers with a view to transferring them to the new system, subject to compensation. Besides these changes, which were designed to make the labour market more flexible, it strengthened the right to unionization and complemented this with legal instruments to make it effective.

In fact, the results in terms of greater labour market flexibility were not striking, largely owing to the countervailing effects of the subsequent 1993 social security reform. The changes made to the legislation on temporary contracts were undoubtedly one of the factors that led to the share of temporary employment in total urban employment increasing from 15.8% to 20% between 1990 and 1997 (ILO, 1998). Nonetheless, this increase in flexibility and reduction of the excessive costs associated with the old unemployment system were offset by the growing cost of taking on new workers and by the rise in redundancy payments. The former was a direct result of the social security reform, which raised the contribution costs payable by the company from 13.5% to 25.5% (of which 13.5% now goes to pensions and the other 12% to health),[3] increasing social costs from 47% to 59.4% of basic wages.

III

Macroeconomic developments

The 1990s were characterized by pronounced "stop and go" cycles in macroeconomic policy. Although these cycles were partly driven by external shocks, both positive and negative, particularly those deriving from the international capital market, others originated in domestic events.

The decade began in the midst of rising inflationary pressures. These were addressed by means of a strong adjustment package, brought in towards the end of 1990, which included a severe monetary contraction, revaluation, a moderate fiscal adjustment (table 1) and faster implementation of the trade liberalization programme. This package slowed economic growth, halted the inflationary trend and sharply improved the current account of the balance of payments.

As a result of the heavy pressure placed on international reserves and the growing quasifiscal costs to which these contractionary monetary measures gave rise over the course of 1991, the Bank of the Republic decided to speed up the revaluation process and drastically cut interest rates. At the same time, rapid growth in tax revenue led to strong growth in public spending, the overall fiscal position remaining in balance. The combined result of these policies was a rise in internal and external borrowing which caused aggregate domestic demand to grow rapidly in 1992-1994, more rapidly in fact than at any other time in Colombia's post-war economic history. Economic activity and productive investment boomed, but against the background of a sharp deterioration in the current account balance. The biggest exception in terms of production was agriculture, which struggled to cope with trade liberalization right from the beginning of the decade, particularly as international prices, especially for coffee, were low. Inflation was kept in check –and even declined somewhat further during the first part of the upturn– thanks to currency appreciation and rapid import growth, but there were clear signs of inflation in domestic asset prices (real estate and stock market assets).

Monetary policy became increasingly tight over the course of 1994 and 1995. The strong controls on foreign borrowing adopted in 1994 also helped to slow private demand growth and prevented this tight monetary policy giving rise to a further currency appreciation in real terms. Aggregate demand began to slow in 1995 and, more sharply, in 1996, giving rise to a pronounced fall-off in production activity and halting the deterioration in the current account of the balance of

[3] See ILO (1998) and Reina and Yanovich (1998).

TABLE 1

Colombia: Policy variables and overview of results

	1975-1979	1980-1985	1986-1990	1991-1999	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Real exchange rate (1994=100)	81.0	73.0	103.0	103.1	114.9	113.0	106.8	107.5	100.0	102.3	98.8	93.3	98.3	108.2
Real interest rate														
Deposit rate (90 days)		10.3	6.4	6.2	4.9	4.8	-0.4	2.5	5.5	9.3	8.2	4.8	11.8	8.8
Average lending rate			14.1	14.9	12.6	12.9	8.1	10.9	14.4	18.2	17.7	13.6	20.7	17.4
Total government expenditure (% of GDP)														
DANE	20.3	28.1	30.1	31.7	30.4	31.0	31.1	31.3	31.3	34.1				
Bank of the Republic (net of transfers)				31.9	30.4	31.8	31.0	31.3	31.4	34.0				
Ministry of Finance									30.3	32.0	35.8	37.2	36.0	
Overall budget deficit or surplus, net of privatizations (% of GDP)	-1.5	-5.3	-1.5	-1.5	-0.4	0.0	-0.1	0.0	0.1	-0.4	-2.0	-3.8	-3.9	-5.2
Central Government	-0.2	-3.3	-0.9	-2.2	-0.6	0.4	0.1	-0.3	-1.6	-2.6	-4.3	-4.3	-5.6	-5.9
Rest of the public sector	-1.3	-2.0	-0.6	0.7	0.2	-0.4	-0.3	0.3	1.7	2.3	2.3	0.5	1.7	0.6
GDP growth	5.0	2.6	4.6	2.6	4.3	2.0	4.0	5.4	5.8	5.2	2.1	3.4	0.4	-4.5
Value added by tradables	4.9	1.8	5.7	0.9	5.1	2.2	0.8	2.1	1.3	5.8	-0.6	0.9	1.4	-5.5
Value added by non-tradables	5.1	3.2	3.7	3.4	3.2	2.0	5.4	5.3	7.8	6.4	4.8	4.7	-1.2	-4.4
Aggregate domestic demand	4.8	2.4	3.4	8.5	2.3	0.1	10.0	12.1	12.0	5.8	1.1	4.0	-1.1	-8.3
Inflation (CPI end of period)	23.9	26.7	26.3	20.2	32.4	26.8	25.1	22.6	22.6	19.5	21.6	17.7	16.7	9.2
Exports (% of GDP at 1975 prices)	15.0	14.4	18.5	22.9	20.7	22.7	23.1	23.3	22.0	21.7	23.3	23.2	23.1	24.2
External balances (% of GDP at 1994 par exchange rate)														
Trade balance	3.5	-3.1	3.9	-1.2	4.3	6.2	2.3	-2.8	-3.3	-3.3	-2.9	-3.2	-4.7	0.4
Current account	1.5	-6.8	0.3	-3.1	1.2	4.9	1.7	-3.7	-5.2	-5.6	-5.6	-6.5	-6.2	-1.2
Gross fixed capital formation (% of GDP at 1975 prices)	15.6	17.1	15.5	16.7	14.0	12.9	13.9	18.0	20.7	19.8	19.1	18.1	16.0	11.8

Sources: Bank of the Republic, National Department of Statistics (DANE) and National Department of Planning (DNP).

payments. The continuing surge in public expenditure was the main factor underlying growth in those years.

Cuts in interest rates over the course of 1996 helped to reactivate private demand and production activity in 1997. Public spending did not contribute to this upturn; rather, it was during those years that the first steps began to be taken to curb growing expenditure by the national Government, given the evidence of rapid growth in the budget deficit. Strong control of external borrowing curbed the tendency towards appreciation of the currency that had made itself felt during 1996 (this being reflected in the annual averages for 1997), but there was a further moderate deterioration in the current account.

The upturn was short-lived, owing to the effects of the international crisis and the measures taken to deal with it, at a time when the external accounts and the fiscal situation were weak. The tight monetary policy which was adopted to deal with the crisis was effective in gradually lowering the real exchange rate through a series of changes to the exchange rate band, reducing aggregate demand, improving the external accounts and lowering inflation, but at the cost of bringing on the worst recession in Colombian history and accelerating the deterioration of the financial system portfolio. Paradoxically, these fiscal austerity measures were unable to check the deteriorating trend in the budget deficit; rather, the loss of tax revenue resulting from the recession, rising debt service charges and the costs involved in the financial rescue resulted in a further deterioration in the fiscal position in 1999. A highly competitive exchange rate and the fall in interest rates that took place in 1999 helped bring about a moderate recovery in production activity in 2000.

All in all, economic growth was slow by the historical standards of the country, and was much more unstable. Average growth rates have been greatly affected by the severity of the recent crisis, considering that up until 1997 they stood at moderate levels that were only slightly lower than those seen in the second half of the 1980s. By contrast, instability –both in growth and, to an even greater extent, in aggregate demand– was one of the most striking features of the decade as a whole, all the more so in a country whose tradition of gradualism and anticyclical economic management had given it the reputation of having the most subdued economic cycles of any country in Latin America. Other notable features were the high current account deficit that persisted throughout most of the decade, associated in part with the rising trend of the currency, and the structural deterioration in the public finances.

In terms of the production structure, the pattern of economic growth was characterized by a rapid decline in the share of production accounted for by the agricultural and industrial sectors (table 2). This development has been manifest since the years of strong growth, showing that the rapid economic expansion of that time was dependent on the services and construction sectors, i.e., on non-tradable activities associated with internal demand. In fact, some agricultural activities, particularly crops with a short cycle (cereals and oil crops) went through a severe crisis in the early years of the 1990s. This high degree of dependence on domestic demand during the years of growth was also reflected in a slowdown in the rising trend that had been seen in the export coefficient from the mid-1980s to 1991 (table 1).

The crisis in certain activities that had experienced a strong upturn in the first half of the decade (construction and, latterly, financial services), together with the decline of manufacturing industry, which was particularly marked during the recent crisis, were the main changes seen in the production structure during the second half of the decade. Mining and a few services (transport and government services until the fiscal adjustment programmes began) were the only sources of growth, and weak ones at that, during this period.

TABLE 2

Colombia: Sectoral composition of GDP and employment
(Percentages)

	GDP (1975 prices)					Employment		
Economic sector	1985	1991	1995	1997	1999	1991	1995	1997
Agriculture	21.9	21.8	19.3	18.8	19.9	26.7	22.2	22.9
Mining	2.3	4.6	4.3	4.7	5.7	1.2	0.8	0.7
Manufacturing	21.2	21.4	19.0	18.6	16.9	15.0	15.7	13.2
Electricity, gas and water	1.0	1.1	1.1	1.1	1.2	0.6	0.5	0.9
Construction	4.4	3.0	3.7	3.7	2.6	4.5	6.1	5.3
Trade	12.1	11.5	11.9	12.0	11.5	20.7	21.7	21.9
Transport	9.4	8.6	8.7	9.4	9.9	5.0	5.5	5.5
Financial services	14.2	14.6	16.3	17.3	16.5	3.6	4.6	5.0
Other services	13.2	13.2	12.9	14.5	16.1	22.6	22.8	24.7
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Tradables	45.4	47.8	42.6	42.1	42.5	43.0	38.7	36.8
Urban						14.2	14.1	12.5
Rural						28.8	24.7	24.3
Non-tradables	54.3	52.0	54.7	57.9	57.6	57.0	61.3	63.2
Urban						43.9	47.0	49.4
Rural						13.1	14.3	13.8

Source: DANE, National Household Survey and National Accounts.

IV

The labour market

1. General trends

Figure 1 shows how the main labour market indicators have evolved in the seven biggest cities of Colombia since 1976, and compares them with the national indicators, which have been available only since 1991.[4] It shows that the 1980s were a period of rapid growth in urban labour force participation, mainly because of the speed with which women were entering the workforce, which in turn was due to the decline in fertility. Sluggish economic growth in the first half of that decade meant that job creation in the seven biggest cities was slow. This dynamic, in conjunction with the rise in participation referred to, led to a substantial increase in the unemployment rate, which peaked in 1986. Since then the labour market has changed dramatically. As the economy started to recover its dynamism, employment began to grow strongly, and this helped to bring down unemployment levels.

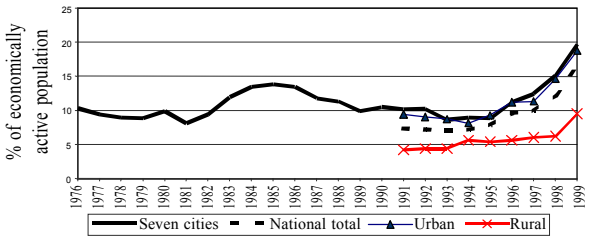
These trends in the urban labour market continued until 1992. Since then, and coinciding with the adoption of structural reforms, the tendency has changed again. After peaking in 1993, and despite continued strong growth in aggregate demand and rapid economic expansion, the rate of job creation in the seven biggest cities and in the urban sector as a whole began to decline. At the same time, the upward trend in the participation rate was checked, which meant that for some years the reduced dynamism of employment did not affect the unemployment rate. This rate, in fact, averaged 8.7% in the cities in 1993-1995, the lowest since the early 1980s. The trends seen in the rural labour market, by contrast, were negative during those years, owing to the severe crisis that affected the agricultural sector. In particular, employment fell sharply in rural areas between 1991 and 1993 and the unemployment rate tended to climb during the first half of the 1990s, although from levels much lower than those seen in urban areas. The overall effect of these opposing tendencies in urban and rural areas was a gently falling trend in the employment rate –once again, this was despite a strong economic upturn– which was offset by a similar movement in labour force participation, so that the national unemployment rate stayed close to 7%.

In the second half of the decade there was a marked deterioration in the urban labour market, owing to the sharp fall in employment rates and the newly rising

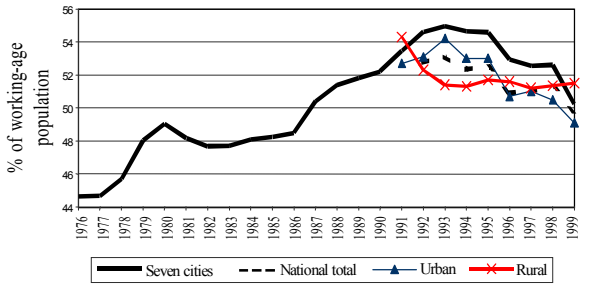
FIGURE 1

Colombia: Labour market indicators, national and urban, 1976-1999

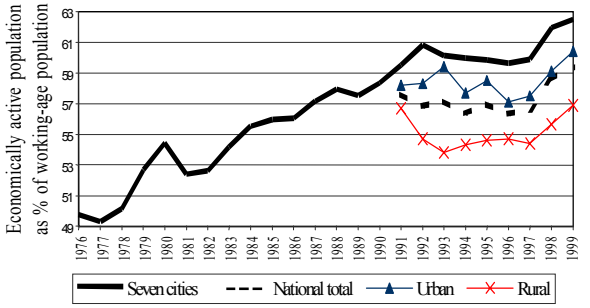
A. Unemployment rates



B. Employment rates



C. Participation rates



[4] For previous years there are only two national surveys in existence, that of 1978 and that of 1988. The latter is not strictly comparable with the others as its figures for urban areas cover only the seven biggest cities.

trend in participation rates. This new dynamic manifested itself, from 1996 onward, in the form of a rapid increase in the unemployment rate, so that by 1999 this stood at the highest level ever seen in the country. Although, as we shall see later, the lack of dynamism in employment cannot be attributed exclusively to internal demand, there can be no doubt whatsoever that in the most recent years this variable has played a decisive role. In particular, the biggest falls in the employment rate have coincided with periods of slowdown and recession (1996 and 1999), and in general there has been a clear association since 1996 between the behaviour of employment in the biggest cities and quarterly GDP changes (Colombia, DANE, 1999).

Overall, employment rates tended to fall throughout the decade, particularly in rural areas during the early part of it and in urban ones during the second half. In the country as a whole, the employment rate fell from 53% in the early years of the decade to just under 50% in 1999. The renewed tendency for labour force participation to rise meant that this led to an explosion in unemployment. As we shall see, these tendencies were accompanied by major changes in the sectoral composition of employment.

Table 3 provides fuller details of movements in labour market indicators for 1991 and 1997, the two years selected for the purpose of analysing the effects of the reforms. As has already been noted, 1991 saw the completion of the trade reforms and inward FDI liberalization and the issuing of the new political charter. In 1997, the effects of the reforms can be appreciated, but the consequences of the severe crisis affecting the Colombian economy in recent years can also be identified.

The indicators given in table 3 show that female participation rates are much lower than male ones. The labour force participation of the latest generations of women has increased in urban areas, however, owing to higher levels of education and lower fertility rates. During the period under analysis, it transpires that male participation fell in urban and rural areas and female participation fell in rural areas (Henao and Parra, 1998; Farné, Vivas and Núñez, 1998 and Ribero and García, 1996).

Participation and employment rates rise as educational levels increase, regardless of age group, gender or geographical area. Between 1991 and 1997, employment rates fell for all educational groups, with the exception of more highly educated women. Unemployment is higher for women in all educational groups and for people with 10 to 15 years of education. Between 1991 and 1997, unemployment rose for all educational categories, with the exception of more highly qualified people in rural areas, this exception being due, however, to workers in this category withdrawing from the labour market, as their employment rate fell substantially. Among those with 10 to 15 years of schooling, the rise in unemployment was slightly higher among men. As regards age, most of the population, in both urban and rural areas, is in the 25 to 50 cohort, and it is in this age group too that the highest rates of employment and participation are found. Conversely, unemployment rates tend to fall as age increases.

2. Employment trends

To achieve a more detailed analysis of the dynamic of the labour market in Colombia, an exercise was devised to break down changes in its structure resulting from shifts in the supply of and demand for labour.[5] The results are collected in table 4. This establishes that supply-side changes, whether they are due to demographic factors or to changes in the total participation rate, have to match changes in the structure of the labour market brought about by demand factors, i.e., by changes in the employment and unemployment rates, as a proportion, in both cases, of the total population of the country.

Three basic conclusions can be drawn from these results. The first, relating to supply, is that the supply of labour grew moderately during the period analysed. In 1991-1995 the positive effect of the demographic component was largely offset by the decline in labour force participation. The demographic effect halted entirely in the middle of the decade, giving rise, in conjunction with the continuing decline in labour force participation, to a fall in the labour supply in 1995-1997. As we have seen, the downward trend in participation came to an end in 1998, which is outside the reference period for analysing the effects of the reforms.

The second conclusion relates to the demand for labour: taking the period as a whole, the job creation capacity of the economy was very low. The inadequacy of the results achieved in this area were made manifest by a fall in the employment rate equivalent to 2.2 per-

[5] This section and the following ones define the main labour market indicators in relation to the *total* population, and thus depart from the approach traditionally followed in the study of the labour market whereby these variables are defined in relation to the working-age or economically active population. The methodology used is set out in Taylor (1998).

TABLE 3

Colombia: Main labour market indicators by gender, years of education, age and area, 1991-1997
(Percentages)

By area and gender, 1991 and 1997

			1991	1997
	National	Men	78.4	74.0
T		Women	37.9	38.3
P	Urban	Men	73.1	70.4
R		Women	40.9	41.5
	Rural	Men	84.4	82.6
		Women	33.7	28.3
	National	Men	4.3	6.8
		Women	10.7	13.3
U	Urban	Men	6.4	8.7
R		Women	12.7	13.3
	Rural	Men	2.2	2.9
		Women	7.6	13.4
	National	Men	75.1	69.0
		Women	33.8	33.2
E	Urban	Men	68.4	64.2
R		Women	35.7	36.0
	Rural	Men	82.6	80.1
		Women	31.2	24.5

By area and age, 1991 and 1997

			1991	1997
	National	12 to 24	45.7	39.9
		25 to 50	66.7	66.8
		Over 50	47.4	44.3
T	Urban	12 to 24	41.9	37.5
		25 to 50	67.1	67.8
P		Over 50	39.7	40.2
	Rural	12 to 24	50.2	46.0
R		25 to 50	66.2	63.9
		Over 50	55.5	54.1
	National	12 to 24	14.1	19.0
		25 to 50	6.3	7.0
U		Over 50	2.0	4.1
R	Urban	12 to 24	20.1	22.9
		25 to 50	5.8	8.0
		Over 50	3.6	5.1
	Rural	12 to 24	8.3	10.6
		25 to 50	2.2	4.1
		Over 50	0.7	2.2
	National	12 to 24	39.3	32.2
		25 to 50	63.8	62.1
E		Over 50	46.4	42.5
R	Urban	12 to 24	33.5	28.9
		25 to 50	63.2	62.4
		Over 50	38.2	38.2
	Rural	12 to 24	46.0	41.1
		25 to 50	64.8	61.3
		Over 50	55.1	52.9

By area and years of education, 1991 and 1997

			1991	1997
	National	9 years or less	54.1	50.2
		10 to 15 years	64.9	65.7
		More than 15 years	88.4	86.9
T	Urban	9 years or less	49.2	47.0
P		10 to 15 years	64.7	65.7
R		More than 15 years	87.9	86.9
	Rural	9 years or less	58.5	56.2
		10 to 15 years	65.5	66.4
		More than 15 years	96.1	88.4
	National	9 years or less	5.3	8.0
		10 to 15 years	11.7	13.3
U		More than 15 years	4.0	5.2
R	Urban	9 years or less	8.4	10.0
		10 to 15 years	11.5	13.3
		More than 15 years	4.0	5.3
	Rural	9 years or less	3.0	4.8
		10 to 15 years	12.2	13.9
		More than 15 years	4.3	2.0
	National	9 years or less	51.2	46.2
		10 to 15 years	57.3	57.0
		More than 15 years	84.9	82.3
E	Urban	9 years or less	45.1	42.3
R		10 to 15 years	57.2	57.0
		More than 15 years	84.4	82.2
	Rural	9 years or less	56.7	53.6
		10 to 15 years	57.6	57.2
		More than 15 years	92.0	86.6

By years of education and gender, 1991 and 1997

			1991	1997
	9 years or less	Men	77.6	71.7
T		Women	32.7	30.4
P	10 to 15 years	Men	78.4	77.7
R		Women	53.6	55.7
	More than 15 years	Men	93.0	90.0
		Women	81.8	83.0
	9 years or less	Men	3.5	6.0
		Women	9.2	12.3
U	10 to 15 years	Men	72.1	69.9
R		Women	45.0	46.2
	More than 15 years	Men	90.1	86.1
		Women	77.4	77.6
	9 years or less	Men	74.8	67.4
		Women	29.7	26.7
E	10 to 15 years	Men	8.0	10.1
R		Women	16.0	17.1
	More than 15 years	Men	3.2	4.3
		Women	5.4	6.5

Source: Calculated by the author on the basis of National Household Surveys.

TPR : Total participation rate
UR : Unemployment rate
ER : Employment rate

TABLE 4
Colombia: Breakdown of overall changes in the labour market
(Percentage point changes in rates calculated in relation to the total population)

	1991-1995	1995-1997	1991-1997
	Changes in labour supply		
Total[a]	*1.2*	*-0.6*	*0.5*
Demographic	2.2	-0.1	2.2
Participation	-1.0	-0.6	-1.6
	Absorption by labour demand		
Employment[a]	*0.7*	*-2.9*	*-2.2*
Tradables	-3.9	-3.0	-7.0
Non-tradables	4.7	0.1	4.8
Unemployment	*0.5*	*2.1*	*2.6*

Source: Calculated by the author on the basis of National Household Surveys.

[a] The breakdown excludes the combined effect of changes in each of the components.

centage points of the entire population between 1991 and 1997, mainly owing to the sharp relative decline in job creation in sectors producing internationally tradable goods. The loss of employment in tradable sectors was a feature of the entire decade, and its severity means it must be associated with the effects of the structural reforms. Job creation in sectors producing non-tradable goods and services offset this during the upturn, but ceased to do so during the following years of slowing economic growth, which meant that the fall in employment in tradable sectors was fully reflected in the employment rate.

Lastly, the favourable combination of participation and employment trends in non-tradable sectors was neutral in its effect on unemployment up until 1995, after which the situation changed markedly, with unemployment rising by the equivalent of 2.1 percentage points of the total population between 1995 and 1997. As we have seen, the severe recession that followed and the renewal of the upward trend in labour force participation would cause the unemployment rate to explode over the following years.

Analysis of employment trends can be carried out at a level of one digit of the economic activity classification, and changes in the employment rate can be broken down into weighted changes in the difference between per capita output growth and changes in the labour productivity of each sector.

The results of this breakdown are given in table 5. This shows that the general decline of employment in agriculture and industry was associated with a sharp fall in output per inhabitant combined with significant increases in labour productivity. As a result of this, between 1991 and 1997 the employment rate in trad-

TABLE 5
Colombia: Sectoral breakdown of labour productivity, output per capita and employment changes[a]
(Percentages)

	1991-1995	1995-1997	1991-1997
	Growth in labour productivity		
Agriculture	18.7	-4.1	13.8
Mining	65.6	22.7	103.2
Industry	-2.8	18.4	15.2
Electricity, gas and water	34.1	-38.6	-17.6
Construction	7.2	14.1	22.3
Trade	13.2	1.1	14.5
Transport	2.5	10.6	13.3
Financial services	-3.0	0.1	-2.9
Other services	11.7	4.4	16.6
Total	*10.4*	*4.2*	*15.0*
Tradables	12.0	5.6	18.3
Non-tradables	10.8	4.0	15.2
	Per capita output growth		
Agriculture	-0.7	-3.9	-4.6
Mining	9.0	8.5	18.3
Industry	2.7	-3.7	-1.1
Electricity, gas and water	11.7	2.5	14.6
Construction	46.9	-4.1	40.8
Trade	19.8	-0.9	18.7
Transport	13.6	6.1	20.4
Financial services	24.4	4.4	29.9
Other services	13.4	9.9	24.6
Total	*11.2*	*1.2*	*12.5*
Tradables	1.7	-2.6	-0.9
Non-tradables	19.8	4.2	24.8
	Change in employment rate		
Agriculture	-4.4	0.0	-4.3
Mining	-0.4	-0.1	-0.5
Industry	0.8	-2.9	-2.1
Electricity, gas and water	-0.1	0.3	0.2
Construction	1.7	-1.0	0.7
Trade	1.2	-0.4	0.8
Transport	0.5	-0.2	0.3
Financial services	1.0	0.2	1.2
Other services	0.3	1.2	1.5
Total	*0.7*	*-2.9*	*-2.2*
Tradables	-3.9	-3.0	-7.0
Non-tradables	4.7	0.1	4.8

Source: Calculated by the author on the basis of National Household Surveys.

[a] The totals for the three breakdowns do not exactly match because the separate calculations exclude the combined effect of changes in each of the two components.

able sectors fell by an amount equivalent to seven percentage points of the entire population. By contrast, sectors associated with non-tradable activities, chiefly services, saw a sustained increase in output per inhabitant, especially during the economic upturn. During those years, per capita output growth exceeded labour productivity growth. This meant that dynamic job creation could take place in these sectors, but this process was interrupted and even reversed in a number of sectors during the following years. The combined effects of the slowdown in job creation in non-tradable sectors from 1996 onward –associated with the slowdown in the economy– and the long-term decline of employment in tradable activities, therefore, account for the sharp fall in the total employment rate of the economy.

These general tendencies at the sectoral level have some peculiarities. On the one hand, the extent of the decline in agricultural sector employment between 1991 and 1995 is striking, particularly in rural areas, where the share of agricultural employment fell by more than four percentage points during those years (table 2). Between 1995 and 1997, by contrast, the fall in employment in tradable sectors was accounted for essentially by the industrial sector, although on this occasion it was associated with a worsening employment situation in urban areas, something that reflected both the effects of the structural adjustment and the slowdown in economic activity.

In conjunction, these tendencies brought about a rapid increase in the share of total employment accounted for by the non-tradable sectors, which rose from 57.0% in 1991 to 63.2% in 1997 (table 2). The procyclical behaviour of employment was particularly striking in the construction sector. This sector grew strongly between 1991 and 1995, but this period was followed by a recession whose effects on job creation are plain to see: the share of the construction sector in total employment rose from 4.5% in 1991 to 6.1% in 1995 and then fell again to 5.3% in 1997.

The above analysis can be extended to take in the dynamic of job creation in each sector in relation to the educational level of workers, their occupational position and their sex. When movements in employment rates are compared by production sector and by level of schooling, two clearly defined patterns emerge (table 6). On the one hand, the employment rate for workers with less schooling fell throughout the decade, and this decline was far sharper in tradable sectors. On the other hand, most skilled jobs were created in the non-tradable sectors, especially financial services and other services, while in tradable sectors the situation as regards jobs requiring higher levels of education was one of stagnation.

In relation to the first point, it is important to note that between 1991 and 1995 the fall in the employment rate for less highly qualified workers, meaning those with some primary education (0-5 years) or incomplete secondary education (6-10 years), was accounted for mainly by the agricultural sector. By contrast, between 1995 and 1997 the fall in the employment rate among these workers was particularly sharp in the industrial sector. In the case of the non-tradable sectors, job creation for less highly qualified workers behaves in a way that is clearly cyclical and is closely linked to the dynamic of the construction industry. During the expansion phase, in fact, this sector was the most dynamic source of new jobs for workers with a low level of education; conversely, during the adjustment phase it was this sector, after industry, that contributed most to the decline in the employment rate among these workers. What this dynamic suggests, then, is that in non-tradable sectors the creation of low-skilled jobs has been associated with the particular economic cycle of each sector. The ability of sectors producing tradable goods to create employment for workers with a low level of education, by contrast, has been in continuous decline.

The sectoral dynamic of the employment rate among highly qualified workers, those with incomplete (12-15 years) and complete (16 years and over) university or polytechnic education, has been subdued, with the exception of financial services and other services. New high-skilled jobs in the financial services and other services sectors alone account for two thirds of the increase in the employment rate among those with a higher level of education throughout the economy between 1991 and 1997. In the case of people with an intermediate level of education (complete secondary education, totalling 11 years of schooling), the trade sector, along with other services, has been the main source of new jobs, with the transport sector also making a major contribution.

Changes in the employment rate by occupational category and by sex, meanwhile, evince three important characteristics (table 7). The first is the markedly cyclical nature of waged job creation in the private sector. During the expansionary phase of the economy, this occupational category was the most dynamic of all in terms of job creation. Between 1995 and 1997, by contrast, it was here that the bulk of the contraction in the demand for labour occurred. The second is the dynamic role played by own-account employment over

TABLE 6

Colombia: Changes in the employment rate by educational level and branch of activity[a]
(Percentages)

Average years of education/ Branch of activity	0-5 years			6-10 years			11 years		
	1991-1995	1995-1997	1991-1997	1991-1995	1995-1997	1991-1997	1991-1995	1995-1997	1991-1997
Agriculture	-3.3	-0.2	-3.5	-0.6	-0.1	-0.7	-0.2	0.2	0.0
Mining	-0.2	-0.2	-0.4	0.0	-0.1	-0.1	0.0	0.1	0.0
Industry	-0.1	-1.1	-1.2	0.1	-1.3	-1.2	0.9	-0.6	0.3
Electricity, gas and water	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Construction	0.8	-0.5	0.3	0.6	-0.6	0.0	0.2	0.0	0.2
Trade	0.0	-0.4	-0.4	0.0	-0.4	-0.4	1.0	0.1	1.1
Transport	0.1	-0.4	-0.3	0.2	-0.2	0.0	0.3	0.2	0.5
Financial services	0.1	0.0	0.2	0.2	-0.1	0.0	0.3	0.0	0.3
Other services	-0.3	0.1	-0.3	-0.2	-0.2	-0.4	0.7	0.3	1.1
Total	*-3.0*	*-2.5*	*-5.6*	*0.3*	*-3.0*	*-2.7*	*3.2*	*0.3*	*3.5*
Tradables	-3.7	-1.4	-5.1	-0.5	-1.4	-2.0	0.6	-0.3	0.3
Non-tradables	0.6	-1.1	-0.5	0.8	-1.6	-0.7	2.6	0.6	3.2

Average years of education/ Branch of activity	12-15 years			16 years and more			Total		
	1991-1995	1995-1997	1991-1997	1991-1995	1995-1997	1991-1997	1991-1995	1995-1997	1991-1997
Agriculture	-0.1	0.0	0.0	-0.1	0.1	0.0	*-4.4*	*0.0*	*-4.3*
Mining	0.0	0.0	0.0	-0.1	0.1	0.0	*-0.4*	*-0.1*	*-0.5*
Industry	0.0	-0.1	-0.1	0.0	0.1	0.1	*0.8*	*-2.9*	*-2.1*
Electricity, gas and water	0.0	0.0	0.0	0.0	0.1	0.1	*-0.1*	*0.3*	*0.2*
Construction	0.0	0.0	0.1	0.1	0.1	0.1	*1.7*	*-1.0*	*0.7*
Trade	0.1	0.0	0.2	0.0	0.3	0.3	*1.2*	*-0.4*	*0.8*
Transport	0.0	0.1	0.0	0.0	0.1	0.1	*0.5*	*-0.2*	*0.3*
Financial services	0.2	0.0	0.2	0.2	0.3	0.5	*1.0*	*0.2*	*1.2*
Other services	-0.2	0.5	0.3	0.3	0.6	0.8	*0.3*	*1.2*	*1.5*
Total	*0.0*	*0.6*	*0.7*	*0.2*	*1.7*	*2.0*	*0.7*	*-2.9*	*-2.2*
Tradables	-0.1	-0.1	-0.2	-0.3	0.3	0.0	*-3.9*	*-3.0*	*-7.0*
Non-tradables	0.1	0.7	0.8	0.5	1.5	2.0	*4.7*	*0.1*	*4.8*

Source: Calculated by the author on the basis of National Household Surveys.

[a] Contribution of each sector to employment growth relative to the total population. The totals of the three breakdowns do not exactly match because the separate calculations exclude the combined effect of changes in each of the two components.

TABLE 7

Colombia: Dynamic of employment by occupational category and gender
(Percentages)

	1991-1995			1995-1997			1991-1997		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Unpaid family workers	-1.7	-1.1	*-2.8*	0.0	-0.3	*-0.2*	-1.7	-1.3	*-3.0*
Private-sector employees	1.5	2.2	*3.7*	-2.4	-1.0	*-3.4*	-0.9	1.2	*0.3*
Government employees	-1.1	-0.8	*-1.9*	-0.8	0.5	*-0.3*	-1.9	-0.3	*-2.2*
Domestic employees	0.0	-0.2	*-0.2*	0.1	-0.3	*-0.2*	0.1	-0.5	*-0.4*
Own-account workers	1.1	1.1	*2.2*	1.8	0.0	*1.8*	2.9	1.1	*4.0*
Employers	-0.5	0.2	*-0.3*	-0.5	0.0	*-0.5*	-1.0	0.1	*-0.9*
Total	*-0.8*	*1.5*	*0.7*	*-1.8*	*-1.1*	*-2.9*	*-2.6*	*0.4*	*-2.2*

Source: Calculated by the author on the basis of National Household Surveys.

[a] Contribution of each sector to employment growth relative to the total population. The totals of the three breakdowns do not exactly match because the separate calculations exclude the combined effect of changes in each of the two components.

the course of the decade. The conjunction of these two factors during the years of slowing growth undoubtedly points to a growing trend towards informal working. Lastly, female employment rates increased in relative terms; in recent years, however, this tendency has slowed considerably.

Overall, the results suggest that tradable activities are largely responsible for the sluggishness of employment. Meanwhile, it was only during the years of strong growth that non-tradable activities were able to absorb the mass of people displaced from the tradable sectors or seeking work for the first time. The results also suggest that the change in the dynamic of employment by qualification level is closely linked to changes in the sectoral structure of production: the decline of tradable sectors (particularly in agriculture and industry) has resulted in a continuous reduction in the demand for workers with a low level of education, while strong growth in certain non-tradable sectors (financial services and other services) has chiefly generated demand for qualified labour.

3. Changes in the dynamic of productivity

To analyse the extent to which rising labour productivity in the economy as a whole has been the result, on the one hand, of productivity improvements in specific production sectors and, on the other, of changes in the composition of production or employment, table 8 shows the results of three different exercises that involved breaking down changes in overall labour productivity. The first (A) breaks down these changes into the sectoral sum of the difference between changes in output and employment growth, each weighted by its share in total output and employment. The second and third (B and C) break down total labour productivity growth into a weighted average for productivity changes in each sector plus a term that reallocates output or employment between sectors, respectively.

The results of the first breakdown suggest that the increase in the productivity of the economy came about through a combination of several factors. The contribution of tradable sectors to total productivity growth in the economy was substantial, but it was associated, in agriculture and industry, with a combination of low output growth and rapidly falling employment in these sectors. This is particularly true in the agricultural sector during the period 1991-1995 and in industry during 1995-1997, i.e., during the years in which these sectors were undergoing the severest adjustment. In the case of mining, by contrast, the strong contribution of this sector to overall growth in the productivity of the economy was made in a context of strongly and steadily rising output. Something similar happened in the non-tradable sectors during the period of strong growth, which continued, albeit at a slowing rate, until 1997.

The second and third breakdowns are alternative, although equivalent, exercises. Their most striking aspect is the fact that the productivity associated with the dynamic of each of the sectors was the determining factor in the rise of total productivity in the economy, while the effect of reallocating output or labour between sectors was very small. The relative growth of the financial sector, and the redeployment of labour to this sector, was a source of rising productivity, but was offset by similar processes of relative growth in other non-tradable sectors, particularly trade and other services.

4. The dynamic of wage incomes

Earnings showed a moderate downward trend throughout the 1980s (figures 2 and 3). By contrast, real earnings for the different branches of economic activity and educational levels increased steadily from 1991 onward. There was a general rise in wages in all branches of economic activity, particularly government and financial services. In the construction sector incomes also increased greatly at the beginning of the decade, but this rise was quickly cut short when the upturn ended.

The dynamic of earnings by educational level provides another perspective (figure 3). Although earnings increased for all educational levels in the early 1990s, this tendency was not sustained. From 1994 onward, in fact, earnings began to stagnate at all educational levels, except for people with university education, and from 1996 onward wage incomes began to fall by stages, the exception being the earnings of workers with complete or incomplete university or polytechnic education. The wage dynamic experienced from 1996 onward is evidence that the earnings of workers with a lower level of education are more closely linked to the economic cycle than those of more highly educated groups of workers. Again, the sustained increase in the remuneration of those with a higher level of education –particularly workers who have completed university studies– by comparison with all other educational levels shows that, as a result of the shift in sectoral composition towards tradable sectors and of the technological changes spurred by the reform process, relative demand for well-qualified labour has increased and, perhaps, that the supply of workers with a high level of education

TABLE 8

Colombia: Breakdown of average annual labour productivity growth[a]
(Percentages)

	1991-1995	1995-1997	1991-1997	1991-1995	1995-1997	1991-1997	1991-1995	1995-1997	1991-1997
A.	Change in output weighted by sectoral output share			Change in employment weighted by sectoral employment share			Total		
Agriculture	0.4	0.0	0.2	-0.7	0.4	-0.3	1.0	-0.5	0.5
Mining	0.2	0.2	0.2	-0.1	0.0	-0.1	0.3	0.3	0.3
Industry	0.5	0.0	0.3	0.5	-1.2	-0.1	0.0	1.2	0.5
Electricity, gas and water	0.1	0.0	0.1	0.0	0.2	0.1	0.1	-0.2	0.0
Construction	0.4	0.0	0.3	0.5	-0.4	0.2	-0.1	0.4	0.1
Trade	0.8	0.2	0.6	0.7	0.2	0.5	0.1	0.0	0.1
Transport	0.5	0.4	0.5	0.2	0.0	0.2	0.2	0.5	0.3
Financial services	1.2	0.7	1.1	0.3	0.2	0.3	0.9	0.5	0.8
Other services	0.7	0.9	0.8	0.5	1.0	0.7	0.2	-0.1	0.1
Total[b]	*4.5*	*2.4*	*3.8*	*1.9*	*0.3*	*1.4*	*2.7*	*2.1*	*2.6*
Tradables	1.1	0.2	0.8	-0.3	-0.9	-0.5	1.3	1.1	1.3
Non-tradables	3.5	2.2	3.1	2.2	1.1	1.9	1.4	1.0	1.4
B.	Productivity weighted by output			Reallocation term			Total labour productivity		
Agriculture	1.0	-0.4	0.5	-0.1	0.0	0.0	0.9	-0.4	0.5
Mining	0.7	0.4	0.8	0.1	0.2	0.2	0.9	0.7	0.9
Industry	-0.1	1.8	0.5	0.2	0.0	0.1	0.0	1.8	0.6
Electricity, gas and water	0.1	-0.2	0.0	0.0	0.0	0.0	0.1	-0.2	0.0
Construction	0.1	0.3	0.1	-0.2	0.0	-0.1	-0.2	0.3	0.0
Trade	0.4	0.1	0.3	-0.7	-0.1	-0.5	-0.3	-0.1	-0.2
Transport	0.1	0.5	0.2	0.2	0.2	0.2	0.3	0.6	0.4
Financial services	-0.1	0.0	-0.1	0.9	0.5	0.8	0.8	0.5	0.8
Other services	0.4	0.3	0.4	-0.5	-0.7	-0.6	-0.1	-0.4	-0.3
Total[b]	*2.5*	*2.1*	*2.5*	*0.0*	*0.0*	*0.0*	*2.7*	*2.1*	*2.6*
Tradables	1.4	1.2	1.4	0.1	0.0	0.1	1.5	1.3	1.5
Non-tradables	1.4	1.1	1.3	-0.4	-0.2	-0.3	1.0	0.9	1.0
C.	Productivity weighted by employment			Reallocation term			Total labour productivity		
Agriculture	1.2	-0.5	0.6	0.1	0.0	0.1	1.3	-0.5	0.7
Mining	0.2	0.1	0.2	-0.2	-0.2	-0.2	0.0	0.0	0.0
Industry	-0.1	1.4	0.4	0.2	-0.3	0.0	0.1	1.1	0.3
Electricity, gas and water	0.1	-0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0
Construction	0.1	0.4	0.2	-0.2	0.1	-0.1	-0.1	0.6	0.1
Trade	0.7	0.1	0.5	-0.3	-0.1	-0.2	0.4	0.0	0.3
Transport	0.0	0.3	0.1	0.2	0.0	0.1	0.2	0.3	0.2
Financial services	0.0	0.0	0.0	1.1	0.5	0.9	1.0	0.5	0.9
Other services	0.7	0.5	0.6	-0.2	-0.4	-0.3	0.4	0.1	0.3
Total[b]	*2.7*	*2.3*	*2.4*	*0.6*	*-0.2*	*0.3*	*2.7*	*2.1*	*2.6*
Tradables	1.3	1.1	1.3	0.0	-0.1	-0.1	1.3	1.1	1.3
Non-tradables	1.5	1.2	1.4	-0.2	-0.1	-0.2	1.4	1.0	1.4

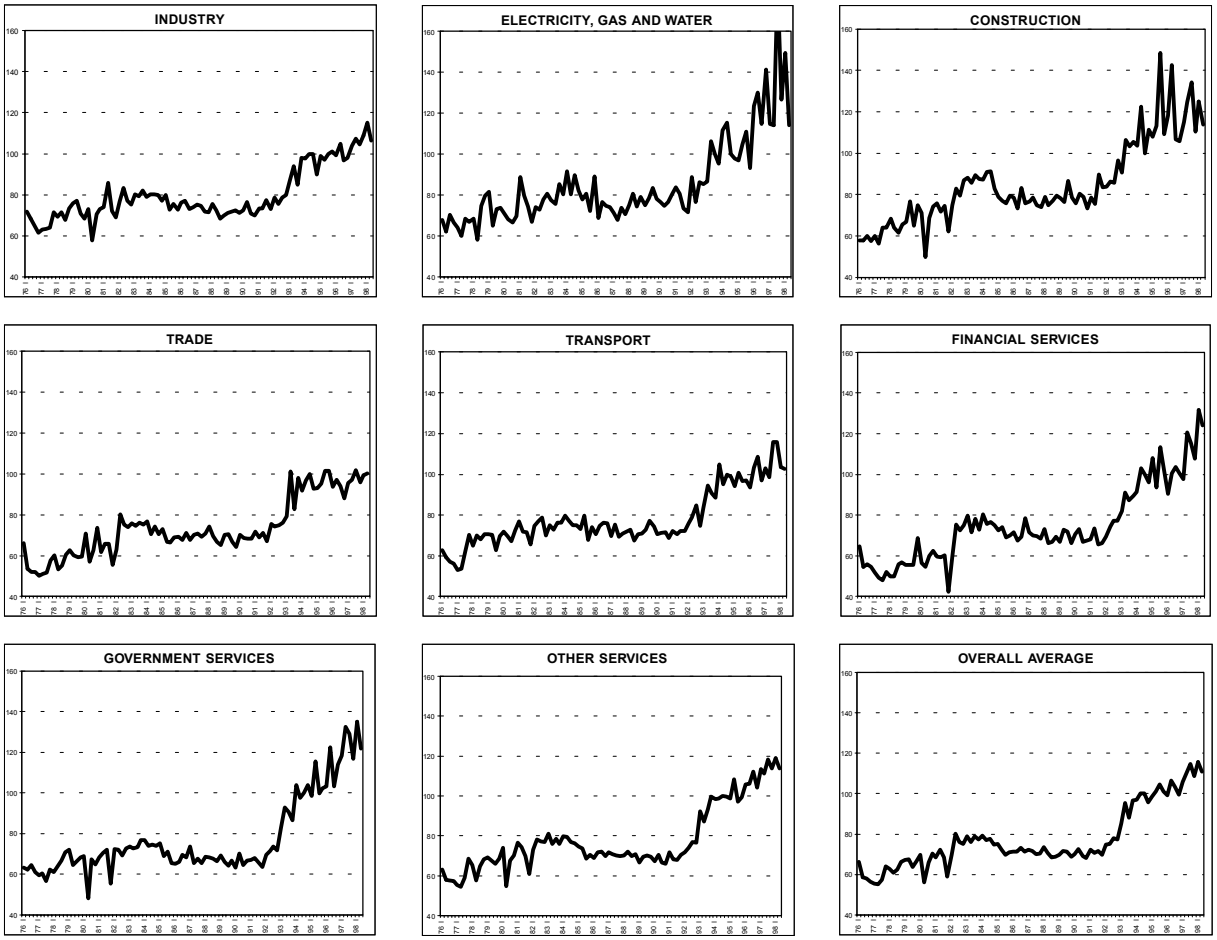
Source: Calculated by the author on the basis of National Household Surveys.

[a] Contribution of each sector to employment growth relative to the total population.

[b] The totals of the three breakdowns do not exactly match because the separate calculations exclude the combined effect of changes in each of the two components.

FIGURE 2

Colombia: Real wages by branch of economic activity
(Index December 1994=100)



Source: National Household Survey.

has not kept pace with these changes in the composition of labour demand (table 9).

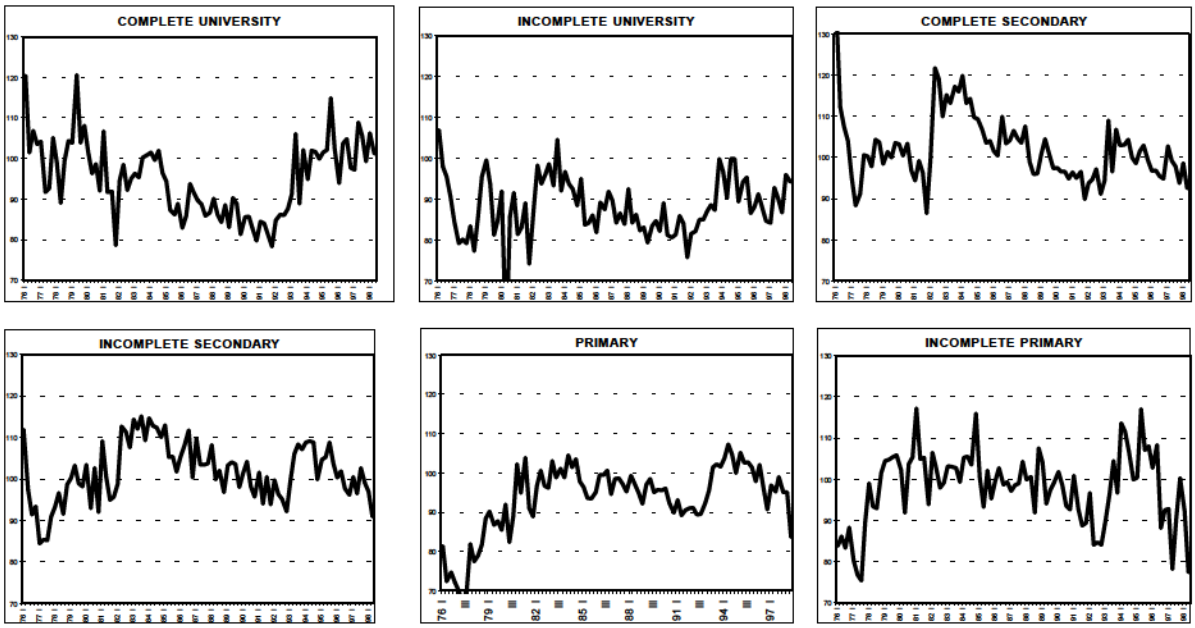
The dynamic of actual wages is in contrast with that of the minimum wage which, after falling 6% at the beginning of the decade (between 1985-1989 and 1991-1992) remained fairly stable. As a result of this, and of the increase in average wages, the proportion of the population below the minimum wage has fallen. In fact, ILO (1998) has estimated that the percentage of waged workers earning less than twice the legal minimum wage was just 63% in 1997, as against 80% or so in 1990.

FIGURE 3

Colombia: Urban earnings by educational level

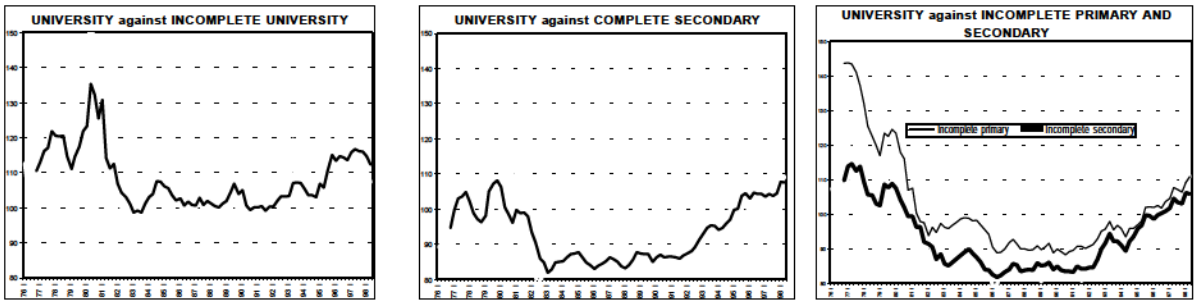
A. Real urban earnings

(Index December 1994=100)



B. Relative urban earnings

(Index December 1994=100)



Source: National Household Survey.

TABLE 9

Colombia: Increases in earnings by educational level, 1993 and 1997

	Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5		Total		Recalculated Gini	
	1993	1997	1993	1997	1993	1997	1993	1997	1993	1997	1993	1997	1993	1997
Education	22.9	28.0	8.1	11.0	5.2	5.5	2.8	2.7	0.9	0.9	3.4	3.6	0.513	0.541
Primary	16.8	19.9	4.4	6.6	2.1	2.4	0.7	0.7	0.1	0.1	1.6	1.7	0.520	0.548
Secondary	5.6	7.0	3.1	3.5	2.1	1.8	1.1	0.7	0.2	0.1	1.2	1.0	0.528	0.558
University	0.6	1.2	0.6	1.0	1.1	1.2	1.0	1.4	0.5	0.7	0.7	1.0	0.535	0.564
Health	11.9	45.5	6.5	15.3	5.3	9.5	3.0	2.3	0.9	-0.4	2.9	4.2	0.520	0.523
Subsidized system	10.7	42.8	4.2	12.8	2.7	6.3	1.0	1.2	0.3	0.1	1.5	3.5	0.524	0.530
Contribution system	1.3	2.7	2.3	2.5	2.6	3.2	1.9	1.2	0.6	-0.6	1.4	0.7	0.532	0.558
Public services	5.8	13.3	4.3	5.4	3.6	3.6	2.4	1.9	1.1	0.6	2.2	2.1	0.528	0.553
Water	1.6	4.6	1.2	1.8	1.0	1.3	0.6	0.7	0.3	0.2	0.6	0.8	0.533	0.561
Electricity	4.2	8.7	3.1	3.5	2.6	2.3	1.8	1.2	0.9	0.4	1.6	1.3	0.530	0.557
Total	*40.7*	*86.8*	*18.9*	*31.7*	*14.1*	*18.6*	*8.2*	*6.9*	*2.9*	*1.1*	*8.5*	*9.9*	*0.492*	*0.491*
Reference datum										Gini before subsidy:			0.535	0.565

Source: Sánchez and Núñez (1999).

V

Effects of the labour market on income distribution

1. A brief review of the literature

A number of recent studies have shown that the tendency for income distribution to improve in urban areas which began in the 1970s continued throughout much of the 1980s, but that this tendency was reversed in the late 1980s, to be followed by quite a marked deterioration in distribution in the 1990s.[6] In rural areas, the opposite trends have been seen: a deterioration in income distribution between 1978 and 1988, followed by an improvement in the first half of the 1990s, which was only partially reversed in the second half. Although these opposing trends tended to offset one another in the early years of the 1990s, the adverse developments seen in urban areas ultimately prevailed, bringing about a deteriorating income distribution situation in the country as a whole (Colombia, DNP/UNDP, 1998; Leibovich and Núñez, 1999; Ocampo, Pérez, Tovar and Lasso, 1998; Sánchez and Núñez, 1999 and Vélez, Kugler and Bouillon, 1999). In fact, as table 10 shows, primary income distribution in the country as a whole deteriorated between 1991 and 1997 by just under two percentage points of the Gini coefficient, owing to an adverse movement of over four points in urban areas, which prevailed over the rise of around four points in rural areas. This development in primary income distribution nationally, however, was offset by the favourable distributive effect of increased public social spending and better targeting of this, which meant that it benefited poorer sectors more (Sánchez and Núñez, 1999); in other words, by improved secondary income distribution. The conclusion would seem to be that overall distribution (primary and secondary) did not show any clear tendency over the course of the decade.

In rural-urban terms, Ocampo, Pérez, Tovar and Lasso (1998) and Sánchez and Núñez (1999) show that in the 1990s massive income redistribution took place between the city and the countryside, the biggest gainers being the highest-income sectors in urban areas and the biggest losers the highest-income sectors in rural areas.[7] What the first study primarily shows is an increase in the relative earnings of the most highly qualified workers, while the second shows a kind of "levelling down" of rural incomes as a result of the crisis in commercial farming. In terms of gender, meanwhile, Vélez, Kugler and Bouillon (1999) show that among men the income gap fell between 1978 and 1988, but increased sharply between 1988 and 1995. By contrast, the tendency towards greater income concentration among women was a characteristic of the 1978-1995 period as a whole.

According to Ocampo, Pérez, Tovar and Lasso (1998), the favourable distribution tendencies that characterized urban areas in the 1980s can be accounted for by a combination of more and better distributed education, the narrowing of the income gap by educational level, the good working opportunities available from the middle of the decade onwards and the lower economic dependence rate in households, facilitated by the demographic transition and the resulting increase in female workforce participation. Fewer working opportunities, growing differentials in earnings from work by educational level and relative growth in non-wage income, on the other hand, were the adverse factors that caused income distribution to worsen in the 1990s. These effects outweighed the impact of favourable tendencies, such as improvements in the quantity and distribution of education, changes in demographic patterns, rising female participation in the workforce and declining average household size, which still continued, albeit at a slower pace. In rural areas, according to this study, trade liberalization destroyed major sources of income, and this had particularly severe effects on big landowners and wage earners in commercial farming, two groups that are in the highest deciles of rural income distribution. The net effect, therefore, was a downward "levelling" of income, which led to better distribution of dwindling rural incomes.

[6] A common feature of recent studies is that they correct the results of household surveys to take account of non-disclosure problems relating to the highest incomes. The correction methods used combine with the problems traditionally encountered when household surveys are processed (the need to correct for unreported or under-reported income, consistency with national accounts, etc.) to produce discrepancies between the estimates of different authors.

[7] These studies disagree as to the amount of the losses suffered by other rural income recipients.

The significant changes seen in the distribution trend for earnings in urban areas can also be expressed as the outcome of large changes in the profitability of education: a declining trend in the 1980s, followed by a substantial increase in the profitability of university education in the 1990s (Sánchez and Núñez, 1998). According to this study, these changes in relative wages are due to alterations not in the relative supply of labour but rather in the demand for it, and are related to technological change, the structure of sectoral production, relative factor productivity, the economic liberalization and economic adjustment process and changes in the prices of non-labour factors, in particular the relative price of capital.

The analysis carried out by Leibovich and Núñez (1999) for the rural sector shows, for the period 1988-1995, that income distribution improved for both wage earners and own-account workers of both sexes. This result was positively influenced by: changes in personal circumstances (education and household size in particular), in labour force participation and in the profitability of education. They also calculated the Gini and entropic measures which show that there is less inequity among wage earners than among own-account workers, whether male or female. Again, just as in the studies dealing with cities, the Gini is higher for women than for men.

Changes in distribution were heavily influenced by increases in the homogeneity or heterogeneity of incomes within groups with the same basic characteristics (in terms of age, gender, education, experience, family headship and residence, in particular).[8] According to Vélez, Kugler and Bouillon (1999), increased income homogeneity in such groups accounts for a large part of the improvement in urban income distribution in the period 1978-1988, and increased heterogeneity for much of the reversal seen in the following period. For the recent period, Leibovich and Núñez (1999) find that increased income homogeneity among workers with similar occupational characteristics was one of the factors underlying the improvement in rural income distribution.

A number of studies, again, have tried to explore the effects of macroeconomic variables on income distribution. Bernal, Cárdenas, Sánchez and Núñez (1998) find that a relative increase in the size of the tradable sectors tends to reduce the Gini coefficient, while higher inflation, a higher unemployment rate and real currency depreciation tend to raise it. Although the results of Ocampo, Pérez, Tovar and Lasso (1998) do not bear out some of these results (particularly the favourable distributive effects of a lower inflation rate), they reach conclusions that are similar to the first of these results. In particular, this study shows that trade liberalization had an adverse distributive effect in the form of higher income differentials by qualification level; the increase in public spending in the 1990s had a similar effect. The first of these results agrees, furthermore, with those obtained by Birchenall (1997) who, using a probability functions methodology, finds that trade liberalization led to technological change that increased the demand for skilled labour in the seven main cities. For their part, Sánchez and Núñez (1999) find that, in the long term, increases in the unemployment rate and household size and real exchange rate depreciation increase the number of poor households, while improvements in educational levels, productivity and the terms of trade have favourable effects on the incidence of poverty in the main cities.

In summary, the studies that have been carried out largely associate the deterioration in income distribution experienced in the urban areas of Colombia in the 1990s with a far-reaching shift in earnings from work by qualification level, which has widened the income gap between qualified and unqualified workers, to the benefit of the former. The different hypotheses put forward have linked this increase with growth in relative demand for qualified labour resulting from trade liberalization, technical change and higher public spending; the last of these, however, has a favourable countervailing effect on secondary income distribution. Although distribution improved in rural areas, it did so against the background of a substantial loss of revenues resulting from deterioration in the rural terms of trade and the resultant crisis in commercial farming.

2. Earnings and income distribution: general effects

Table 10 shows the results of applying Paes de Barros' methodology (2000) to the National Household Surveys (NHS) for September 1991 and 1997. This methodology essentially consists in simulating what the distribution of income and poverty would have been in 1997 if 1991 labour market conditions had obtained. These conditions are the participation rate, the unemployment rate, the sectoral distribution of employment and earnings. Simulations are carried out for the na-

[8] These effects are captured by residuals (unexplained effects) in income generation functions.

TABLE 10
Colombia: Simulations of the effects of labour market changes on the Gini coefficient, 1991 and 1997

	National	Urban	Rural
Gini 1991	0.5482	0.4977	0.4790
Gini 1997	0.5650	0.5411	0.4409
Difference	0.0168	0.0434	-0.0381
		Labour force participation	
Simulated	0.5595	0.5385	0.4498
Difference	0.0055	0.0026	-0.0089
Explanatory %	32.7	6.0	-23.4
		Unemployment	
Simulated	0.5613	0.5365	0.4446
Difference	0.0037	0.0046	-0.0037
Explanatory %	22.1	10.7	-9.8
		Sectoral composition of employment	
Simulated	0.5495	0.5314	0.4638
Difference	0.0155	0.0097	-0.0229
Explanatory %	92.1	22.3	-60.2
		Relative wages	
Simulated	0.5504	0.5272	0.4295
Difference	0.0146	0.0139	0.0114
Explanatory %	86.5	32.0	30.0
		Sequential	
Simulated	0.5361	0.5201	0.4376
Difference	0.0289	0.0224	-0.0414
Explanatory %	171.9	51.7	-108.7

Source: Calculated by the author on the basis of National Household Surveys.

tional, urban and rural totals, in two ways. Firstly, the effect of each of the labour market variables on income distribution is analysed in isolation. Then, their combined or sequential effect is analysed.[9] In order to check the robustness of the values arrived at, the simulations were repeated a thousand times (Montecarlo experiment).

The simulations of the effects of each of the variables show that if 1991 labour market conditions had obtained in 1997, the Gini coefficient for the country would have been lower in all cases. Thus, the changes in the participation rate raised the Gini coefficient by 0.0055 points (from an actual figure of 0.0168), those in the unemployment rate by 0.0037, those in the sectoral composition of employment by 0.0155 and those in wage levels by 0.0146. The results, then, reveal the greater relative influence exerted by the last two of these variables on the income concentration that took place during this period. The sequential simulation confirms the results. If the set of labour market conditions seen in 1991 had obtained in 1997, the Gini coefficient would have been even lower than it was in the earlier year: 0.536 as against 0.548.

The results of the simulations of labour market conditions for urban areas are similar to those arrived at for the national total. The changes seen in the structure of employment and wages account for 22.3% and 32.0% of the changes in the Gini coefficient. The sequential simulation, meanwhile, accounts for 52% of the increase in the Gini coefficient in urban areas, i.e. 0.0224 out of a total increase of 0.0434 (from 0.497 to 0.541), which implies that the increase in income concentration was also contributed to by other factors not included in the labour market variables used for the simulations (among them being the greater heterogeneity of remuneration for workers with the same characteristics and changes in non-work incomes). In rural areas the Gini coefficient fell by 0.0381 (from 0.479 to 0.441). The changes in participation rates, in unemployment and, vitally, in the composition of employment (which is responsible for 60% of the change in the Gini) account for much of the decline in concentration. Changes in wage levels, however, show the opposite tendency.

The same methodology was applied in the case of changes in poverty levels, with results that were quite weak when compared with those obtained for income distribution. As table 11 shows, the percentage of poor households in the national total was 41.4% in 1997 as against 41.8% in 1991; in other words, the incidence of poverty was basically the same. If we look at the incidence of poverty in urban and rural areas separately, however, different results are obtained. Thus, the percentage of poor households fell in urban areas from 37.5% to 28.9% and increased in rural ones from 55.0% to 59.9%. The simulation exercises show that if the participation rate, the unemployment rate and the sectoral composition of employment seen in 1991 had obtained in 1997, the percentage of urban poor would have been lower than it actually was. In the case of wages, the simulation gives the opposite results.

In the case of the urban sector, however, this methodology has only a very limited ability to explain

[9] The sequential simulation first calculates the effects of changes in participation; once these results have been obtained the unemployment simulations are carried out, then these results are used to carry out the simulations of changes in the sectoral structure of employment. The results from these, lastly, are used to carry out the wage simulations.

TABLE 11
Colombia: Simulations of the effects of labour market changes on the population below the poverty line (PL), 1991 and 1997

	National	Urban	Rural
PL 1991	0.4180	0.3750	0.5500
PL 1997	0.4140	0.2890	0.5990
Difference	-0.0040	-0.0860	0.0490
	Labour force participation		
Simulated	0.4081	0.2852	0.5893
Difference	-0.0059	-0.0038	-0.0097
Explanatory %	-146.7	-4.4	-19.7
	Unemployment		
Simulated	0.4071	0.2824	0.5953
Difference	-0.0069	-0.0066	-0.0037
Explanatory %	-171.6	-7.6	7.6
	Sectoral composition of employment		
Simulated	0.3994	0.2811	0.5697
Difference	-0.0146	-0.0079	-0.0293
Explanatory %	-365.8	-9.2	-59.9
	Relative wages		
Simulated	0.4156	0.2905	0.6001
Difference	0.0016	0.0015	0.0011
Explanatory %	40.9	1.8	2.2
	Sequential		
Simulated	0.4020	0.2839	0.5703
Difference	-0.0120	-0.0051	-0.0287
Explanatory %	-300.1	-6.0	-58.6

Source: Calculated by the author on the basis of National Household Surveys.

the large reduction in poverty levels seen over the period analysed, which would suggest that there are other factors behind this trend. The work of Núñez and Sánchez (1999) shows that the fall in the percentage of people living in poverty in the seven main cities was fundamentally due to changes in the relative price of the basket of foodstuffs used to measure the poverty line. Of the 12 percentage points by which poverty declined, around 8.5 points are accounted for by a "price effect", in that the inflation rate of the poverty line basket of foodstuffs was lower than general inflation.

This methodology works better when it comes to accounting for changes in rural poverty. Thus, the results of the simulation show that if 1991 conditions in the rural labour market had obtained in 1997, the percentage of people living in poverty in the countryside would have been lower than it actually was. In particular, the variable that played the greatest part in the rise in the rural poverty percentage was the composition of employment, which accounts for 60% of the change (0.0293 points out of 0.0490) in the incidence of poverty. The sequential simulation, which takes account of the set of labour market conditions obtaining in 1991, shows that these variables, taken all together, account for 59% of the rise in the incidence of rural poverty (0.0287 out of 0.0490 points).

3. Analysis of labour market effects by income decile

In order to consider in more detail which groups have been the most affected by the changes in the labour market, the simulation exercises were applied to each of the income deciles, in both rural and urban areas, for three variables: total income per capita, earnings per capita and incomes of those in work. The method was used to observe only the isolated effect of each of the labour market variables, without sequential simulation being carried out.

To provide a more accurate understanding of the results of the simulation exercises, table 12 gives some characteristics of the labour market by total per capita household income deciles. As can be seen, participation rates fell considerably between 1991 and 1997 in the two lowest income deciles and, to a lesser extent, in deciles 3 to 6. In the upper income deciles, by contrast, the labour force participation rate was very similar in 1997 to what it had been in 1991. The pattern of the changes that occurred differs between urban and rural areas. While in urban areas the level of labour force participation fell in the poorest deciles and, to a lesser extent, in the richest ones, the rural participation rate increased in all the deciles, particularly the poorest ones, except for the top income decile, where it fell.

Between 1991 and 1997 the unemployment rate in the country as a whole rose by around three points. As table 12 shows, this increase was concentrated in the poorer income deciles, in both urban and rural areas. Between these years, earnings increased in all urban income deciles, although the increase was greater in the upper deciles. Earnings in rural areas, meanwhile, increased in the first four deciles and in decile 10, but fell in deciles 5 to 9.

The effects of these labour market changes on total per capita income are shown in the left-hand panel of table 13. This shows that if 1991 labour force participation rates had obtained in 1997, the poorer deciles, particularly decile 6 and below, would have increased their share of total income, which in turn would have

TABLE 12
Colombia: Labour market indicators by income deciles, 1991 and 1997

	National total		Urban		Rural	
	1991	1997	1991	1997	1991	1997
	Total participation rate %					
Decile 1	54.7	49.2	55.5	44.7	46.4	52.9
Decile 2	56.5	49.3	47.3	47.5	49.9	59.1
Decile 3	53.1	50.1	49.8	50.5	49.6	57.7
Decile 4	54.2	53.2	51.8	53.6	51.0	55.5
Decile 5	55.7	56.4	53.9	56.3	53.7	56.6
Decile 6	57.1	56.6	59.3	57.4	57.6	59.2
Decile 7	58.9	59.1	59.0	59.1	59.4	60.5
Decile 8	61.8	61.0	61.8	63.0	63.1	61.5
Decile 9	63.8	65.2	65.7	65.9	64.2	64.8
Decile 10	68.9	68.4	70.9	69.9	72.2	68.6
	Unemployment rate (%)					
Decile 1	7.3	16.9	10.0	30.7	5.4	12.9
Decile 2	8.5	13.8	17.4	20.0	6.1	10.7
Decile 3	8.8	14.0	16.4	16.2	5.8	7.9
Decile 4	8.7	12.7	14.3	14.6	6.2	6.1
Decile 5	9.2	11.7	11.6	11.4	4.4	6.9
Decile 6	8.3	10.5	10.6	10.8	3.6	5.0
Decile 7	7.3	9.3	9.0	8.3	5.1	5.4
Decile 8	6.6	7.2	6.2	6.3	4.1	5.0
Decile 9	5.5	6.2	5.3	6.5	2.3	4.1
Decile 10	4.0	4.2	3.2	3.5	1.3	2.0
	Annual earnings per capita (1997 pesos)					
Decile 1	53 677	44 486	107 299	136 789	33 033	54 196
Decile 2	61 566	92 052	124 861	156 049	42 090	65 726
Decile 3	106 358	124 307	158 767	171 500	72 840	83 743
Decile 4	130 392	142 184	185 706	196 359	98 041	102 341
Decile 5	149 833	166 767	205 006	207 569	113 091	110 448
Decile 6	167 176	190 167	217 198	242 878	122 326	120 235
Decile 7	185 970	223 300	251 955	263 876	139 755	121 570
Decile 8	211 027	260 934	286 987	311 433	146 987	132 912
Decile 9	262 110	348 211	371 026	417 982	162 367	150 980
Decile 10	601 382	850 812	781 936	940 018	186 405	196 843

Source: Calculated by the author on the basis of National Household Surveys.

improved income distribution. This is consistent with table 12, which shows that labour force participation fell in the poorer deciles in the period being considered. The same thing happens with the simulated effect of the unemployment rate, although the greatest effect on income would have been seen mainly in deciles 2 to 7. Meanwhile, the simulated effect of the changes in the sectoral composition of employment is to increase the share of deciles 5 and 6 and, particularly, decile 10 in total income per capita. Lastly, the simulated wage effect shows that if the national wage structure seen in 1991 had obtained in 1997, all the income deciles would have increased their share of total income except the richest decile, which is the one that would have lost out.

The simulations for urban areas of the effects of the labour market on changes in the shares of the different deciles confirm the results obtained in the previous section. If the labour market structure obtaining in 1991, in terms of the urban participation rate, unemployment rate, sectoral composition of employment and wages, had continued unchanged in 1997, the total income share of deciles 6 and below would have been higher, and this would have improved income distribution. This agrees with the results of table 12, which show that deciles 6 and below experienced declines in labour force participation, rises in unemployment and increases in earnings that were smaller than those seen in the case of the higher income deciles. It can be seen, however, that it is deciles 3 to 6, rather than the poorest ones, that would have benefited most.

In rural areas, if the 1991 rural labour force participation rate had obtained in 1997, the income shares of deciles 8 and below would have been lower, particularly where deciles 3 to 7 are concerned, while the shares of deciles 9 and 10 would have increased, implying a higher Gini coefficient. An effect similar to the above is seen when the effect of the unemployment rate is simulated. Simulation of the effects of the employment structure and wages on changes in the share of each decile in total rural income shows that this share would have declined for the poorest quintiles and increased for the richest ones in the countryside, which in turn would have meant higher income concentration. As regards the effect of the sectoral composition of employment, it transpires that these negative effects would have been greatest in deciles 2 to 4, while the positive ones would have occurred mainly in deciles 8 to 10. In the case of the effect of wages, the simulation shows that all deciles would have seen their income share decline, except for the richest one. The results confirm the trend in the rural labour market between 1991 and 1997, with greater increases in labour force participation and unemployment in the poorer deciles, higher earnings for deciles 5 and below and decile 10, and lower ones for deciles 6 to 9.

The middle panel of table 13 contains the same set of simulations as was described earlier, carried out on this occasion, however, on per capita earnings instead of total income. The simulated effect of the participation rate and the unemployment rate on changes in the earnings shares of the different deciles shows results

TABLE 13

Colombia: Changes in shares of total per capita household income, per capita household earnings and income of the employed. Simulations of changes in the labour market, 1991-1997
(Percentages)

	Change in share of total per capita household income			Change in share of per capita household earnings			Change in share of income of the employed		
	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural
				Labour force participation					
Decile 1	0.05	0.01	-0.03	0.01	0.03	-0.01	0.06	0.03	0.04
Decile 2	0.06	0.02	-0.07	0.03	0.04	-0.02	0.08	0.06	0.17
Decile 3	0.05	0.05	-0.09	0.02	0.03	-0.03	0.11	0.07	0.13
Decile 4	0.08	0.04	-0.11	0.01	0.06	-0.03	0.11	0.01	-0.01
Decile 5	0.06	0.04	-0.11	0.04	0.06	-0.05	0.06	0.01	0.04
Decile 6	0.04	0.03	-0.10	0.05	0.04	-0.07	0.10	0.19	0.08
Decile 7	0.00	0.00	-0.11	0.04	0.04	-0.02	0.22	0.05	-0.10
Decile 8	-0.02	0.00	-0.01	0.02	0.04	-0.02	0.09	0.06	-0.07
Decile 9	-0.04	-0.04	0.19	0.01	0.04	-0.03	-0.02	-0.02	0.40
Decile 10	-0.27	-0.16	0.45	-0.24	-0.39	0.29	-0.83	-0.47	-0.69
				Unemployment					
Decile 1	0.04	0.01	-0.03	0.00	0.01	0.00	0.07	0.07	0.06
Decile 2	0.07	0.02	-0.07	-0.01	0.01	-0.01	0.12	0.11	0.12
Decile 3	0.08	0.04	-0.09	0.00	0.02	-0.02	0.14	0.16	0.18
Decile 4	0.08	0.06	-0.09	0.00	0.01	-0.03	0.18	0.15	0.20
Decile 5	0.09	0.05	-0.13	0.01	0.00	-0.01	0.18	0.20	0.18
Decile 6	0.05	0.05	-0.11	0.01	0.03	-0.02	0.22	0.19	0.22
Decile 7	0.03	0.03	-0.10	0.02	0.00	0.00	0.18	0.20	0.21
Decile 8	-0.04	0.02	-0.01	0.00	0.02	0.05	0.18	0.15	0.07
Decile 9	-0.07	-0.02	0.17	-0.02	-0.03	0.06	0.10	0.03	0.09
Decile 10	-0.33	-0.27	0.48	-0.01	-0.08	-0.03	-1.37	-1.25	-1.33
				Sectoral composition of employment					
Decile 1	-0.02	0.00	-0.03	0.13	0.05	-0.17	0.07	0.08	0.05
Decile 2	-0.05	0.00	-0.08	0.16	0.05	-0.37	0.14	0.13	0.16
Decile 3	-0.02	-0.03	-0.09	0.14	0.09	-0.37	0.17	0.17	0.18
Decile 4	-0.08	0.02	-0.13	0.16	0.08	-0.33	0.20	0.21	0.21
Decile 5	0.05	0.03	-0.04	0.16	0.12	-0.32	0.24	0.19	0.23
Decile 6	0.07	-0.04	-0.05	0.18	0.09	-0.23	0.22	0.26	0.25
Decile 7	-0.08	-0.04	-0.03	0.15	0.10	-0.24	0.28	0.25	0.18
Decile 8	-0.04	-0.04	0.17	0.15	0.09	-0.30	0.26	0.21	0.12
Decile 9	-0.06	-0.07	0.14	0.08	0.05	-0.14	0.05	0.02	0.07
Decile 10	0.22	0.16	0.14	-1.30	-0.72	2.47	-1.63	-1.53	-1.45
				Relative wages					
Decile 1	0.02	0.03	-0.02	0.13	0.05	-0.17	0.07	0.02	0.09
Decile 2	0.03	0.02	-0.03	0.19	0.07	-0.39	0.11	0.11	0.20
Decile 3	0.01	0.04	-0.05	0.18	0.08	-0.42	0.19	0.13	0.19
Decile 4	0.03	0.04	-0.03	0.16	0.09	-0.33	0.17	0.19	0.20
Decile 5	0.05	0.05	-0.05	0.19	0.10	-0.36	0.22	0.26	0.27
Decile 6	0.05	0.05	-0.03	0.17	0.13	-0.28	0.32	0.32	0.29
Decile 7	0.04	0.06	-0.03	0.20	0.12	-0.22	0.26	0.23	0.03
Decile 8	0.02	0.07	-0.05	0.18	0.10	-0.36	0.17	0.13	0.22
Decile 9	0.01	0.03	-0.06	0.06	-0.02	-0.23	-0.12	-0.13	0.15
Decile 10	-0.28	-0.38	0.37	-1.47	-0.73	2.77	-1.40	-1.27	-1.65

Source: Calculated by the author on the basis of National Household Surveys.

similar to those obtained in the case of total income, although the values are generally lower, particularly where the simulation of the effects of the unemployment rate is concerned. By contrast, the simulated effects of employment composition and changes in wage earnings are greater. Thus, the table shows that the earnings shares of all the deciles, both in the country as a whole and in urban areas, would have been higher than they actually were, with the exception of the richest quintile (and only to a small degree in the case of decile 9 in urban areas). For rural areas, the effects of employment composition and the wage structure on rural income shares are also greater than those actually seen in the case of total incomes. The earnings shares of all the deciles would have been lower, except in the case of the richest decile, whose share would have been significantly higher.

Meanwhile, the simulations of the effects of the labour market on the income shares of the different deciles of people in work, as shown in the right-hand panel of table 13, give results that, for the national total and for urban areas, are very similar to those obtained in the case of per capita earnings (central panel of the table), but that are obviously much more pronounced in the case of unemployment. The same does not hold true, however, for rural areas. In particular, the effects of the labour market on the different income recipients would appear to operate in the same direction in urban and rural areas, rather than in opposite directions as happens with the alternative simulations. To achieve a much more accurate understanding of why these contrary effects are seen, it would be necessary to carry out a detailed study of changes in the structure of rural households during the 1990s.

VI

Conclusions

This paper has analysed the changes undergone by the labour market and income distribution over the period falling between 1991, when the reforms began, and 1997. During those years, economic growth was determined by the large swings experienced in aggregate domestic demand. The production structure, meanwhile, underwent appreciable changes: there was an increase in the relative weight of sectors producing goods and services that are not traded internationally, while there was a marked decline in tradable sectors, particularly agriculture and industry.

The repercussions of these changes in the labour market were significant. The ability of the economy to generate employment deteriorated considerably. This phenomenon, furthermore, is not a recent one, as it began to manifest itself during the spectacular surge in aggregate demand seen between 1992 and 1995. At that time it was not reflected in the unemployment rate because of the favourable trend in labour market participation. In sectoral terms, the decline in the ability of agriculture to generate employment was plain to see at the beginning of the decade, while in the case of industry it dates from the slowdown in that sector in the middle of the decade. These developments were offset during the upturn in the first half of the 1990s by the positive situation of non-tradable activities, but this favourable effect disappeared when the boom in domestic demand died down in the middle of the decade.

Those mainly affected by the adverse trend in employment were workers with a lower level of education. The changes undergone by the production structure, in fact, have hit the least well educated workers hardest, since it was these who were most affected by the loss of jobs in tradable sectors, while the rise in employment in non-tradable sectors tended to favour more highly educated workers. Technological change, meanwhile, has been capital-intensive and has reduced the need for labour at all levels of education, although less highly qualified workers have suffered most. The bias in labour demand towards better educated workers, resulting from economic liberalization, is also reflected in the increased profitability of the higher levels of education and in the improved incomes of these workers relative to others, which has had an adverse effect on urban income distribution.

Between 1991 and 1997 the country experienced a rise in income concentration as measured by the Gini coefficient, although this was the net outcome of contrary tendencies in urban and rural areas. Simulations of the income distribution effects of labour market changes between 1991 and 1997 show that the most significant effects in the country as a whole were

produced by the sectoral composition of employment and the wage structure, and to a lesser degree by changes in the labour force participation and unemployment rates. The same results are obtained for urban areas. The simulations for rural areas show that the changes which took place in the labour market between 1991 and 1997, and particularly the changes in the employment structure, helped to reduce income concentration. Movements in poverty, particularly the sharp decline seen in urban areas between 1991 and 1997, were dominated by other factors, above all the significant fall in the cost of the basic food basket, which obviously had opposite effects, in terms of income, in urban and rural areas.

Bibliography

Birchenall, J. (1997): *Income Distribution, Human Capital and Economic Growth in Colombia*, Archivos de macroeconomía, No. 70, Bogotá, Colombia, National Planning Department. Macroeconomic Analysis Unit.

Bernal, R., M. Cárdenas, F. Sánchez and J. Núñez (1998): El desempeño de la macroeconomía y la igualdad: 1976-1996, F. Sánchez (ed.), *La distribución del ingreso en Colombia: tendencias recientes y retos de la política pública*, Bogotá, Tercer Mundo Editores.

Colombia, Contraloría General de la República (1986): *El problema laboral colombiano: diagnóstico, perspectivas y políticas. Informe final de la Misión de Empleo*, Economía colombiana, No. 10, Bogotá.

Colombia, DANE (Departamento Administrativo Nacional de Estadística) (1999): *Evolución de la economía colombiana. Primer trimestre de 1999*, Bogotá.

Colombia, DNP (Departamento Nacional de Planeación)/UNDP (United Nations Development Programme) (1998): *Informe de desarrollo humano para Colombia, 1998*, Bogotá, Tercer Mundo Editores.

Farné, S., A. Vivas and J. Núñez (1998): La estabilidad laboral en el mercado de trabajo urbano en Colombia, 1984-1986, Bogotá, *mimeo*.

Henao, M.L. and A. Parra (1998): Educación y mercados de trabajo, *Empleo: un desafío para Colombia*, Bogotá, International Labour Organization (ILO).

Leivobich, J. and J. Nuñez (1999): *The Microeconomics of Income Distribution Dynamics in Rural Colombia (1978-1988-1995)*, CEDE Document, No. 12, Bogotá, Centre for Economic Development Studies, August.

Núñez, J. and F. Sánchez (1999): *Estimaciones trimestrales de la línea de pobreza y sus relaciones con el desempeño macroeconómico colombiano (1977-1997)*, Archivos de macroeconomía, No. 110, Bogotá, Colombia, National Planning Department. Macroeconomic Analysis Unit.

ILO (International Labour Oganization) (1998): Empleo: un desafío para Colombia, Bogotá, ILO/Ministry of Labour Project, *mimeo*.

Ocampo, J.A. (1997): Una evaluación de la situación fiscal colombiana, *Coyuntura económica*, vol. XXVII, No. 2, Bogotá, Fundación para la Educación Superior y el Desarrollo (FEDESARROLLO), June.

_____ (1998): Una década de grandes transformaciones económicas (1986-1996), *Nueva historia de Colombia*, vol. VIII, Bogotá, Editorial Planeta.

Ocampo, J.A., M.J. Pérez, C. Tovar and F.J. Lasso (1998): Macroeconomía, ajuste estructural y equidad en Colombia: 1978-1996, E. Ganuza, L. Taylor and S. Morley (eds.), *Política macroeconómica y pobreza en América Latina y el Caribe*, Madrid, Mundi Prensa.

Ocampo, J.A. and C. Tovar (1999): *Price-Based Capital Account Regulations: The Colombian Experience*, Financiamiento del desarrollo series, No. 87, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).

Paes de Barros, R. (2000): Methodological issues, paper presented for the project Liberalización de la balanza de pagos: efectos sobre el empleo, la distribución, la pobreza y el crecimiento, Buenos Aires, February.

Reina, M. and D. Yanovich (1998): *Salud, educación y desempleo: diagnóstico y recomendaciones*, Cuadernos, No. 4, Bogotá, FEDESARROLLO.

Ribero, R. and J. García (1996): *Estadísticas descriptivas del mercado laboral masculino y femenino en Colombia: 1976-1995*, Archivos de macroeconomía, No. 48, Bogotá, Colombia, National Planning Department. Macroeconomic Analysis Unit.

Sánchez, F. (ed.) (1998): *La distribución del ingreso en Colombia: tendencias recientes y retos de la política pública*, Bogotá, Tercer Mundo Editores.

Sánchez, F. and J. Núñez (1998): Educación y salarios relativos en Colombia, 1976-1995. Determinantes, evolución e implicaciones para la distribución del ingreso, F. Sánchez (ed.), *La distribución del ingreso en Colombia: tendencias recientes y retos de la política pública*, Bogotá, Tercer Mundo Editores.

_____ (1999): Descentralización, pobreza y acceso a los servicios sociales. ¿Quién se benefició del gasto público en los noventa?, *Coyuntura social*, No. 20, Bogotá, FEDESARROLLO.

Taylor, L. (1998): Balance of payments liberalization: Effects on employment, distribution, poverty and growth, terms of reference for the project Liberalización de la balanza de pagos: efectos sobre el empleo, la distribución, la pobreza y el crecimiento, Santiago, Chile, United Nations Development Programme (UNDP)/ECLAC/Inter-American development Bank (IDB)

Vélez, C.E., A. Kugler and C. Bouillón (1999): The reversal of inequality gains in urban Colombia, 1978-1995: a combination of persistent and fluctuating forces, Washington, D.C., World Bank, *mimeo*.

Villar, L. and H. Rincón (2000): The Colombian economy in the nineties: capital flows and foreign exchange regimes, paper presented at the conference Critical Issues in Financial Reform: Latin American/Caribbean and Canadian Perspectives, Toronto, University of Toronto, The Munk Centre for International Studies Programme on Latin America and the Caribbean, June.

New challenges for *equity in Uruguay*

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From the early decades of the twentieth century onward, the level of equity achieved in Uruguay, and the sophistication of its social welfare institutions, set the country apart from the rest of Latin America. In the second half of the century, this heritage of democracy and equity survived the severe tests to which it was subjected without fracturing too badly. The strength of the country's sociocultural foundations was convincingly demonstrated after the restoration of democracy in 1985, when Uruguay succeeded in maintaining the position it had traditionally held as the regional leader in social development, this leadership being manifested at this time in the country's indices of poverty and inequality as measured by income distribution, which were low by the standards of other Latin American nations. The authors contend that in the last fifteen years of the twentieth century, Uruguay succeeded in coping with these challenges by maintaining a good balance between the political, social and economic aspects of development. They analyse the subject by placing the position of Uruguay in a Latin American context. Using the same type of indicators, they then describe how the country evolved in the closing fifteen years of the twentieth century, after which they discuss some of the most important processes underlying these trends in the market, in households and in the State. Lastly, they offer some reflections on the main challenges that the country will have to address if it is to retain or improve the level of national integration already achieved, on a basis of equity.

I

Introduction

Although it is a widespread phenomenon, the economic restructuring that globalization entails does not occur in a social and political vacuum. On the contrary, it takes place in societies that differ widely in terms of their regulatory systems, institutional structures, legal frameworks and welfare systems, which encapsulate the most important features of their sociocultural characteristics. Thus, while the processes that stem from current development models are to be found in most countries, the pace, sequence and substance of reforms, and thus their social consequences, are different.

From the early decades of the twentieth century onward, the level of equity achieved in Uruguay, and the sophistication of its social welfare institutions, set the country apart from the rest of Latin America. The absence of significant ethnic and cultural divisions, substantial primary product surpluses and early democratic consolidation were some of the factors that helped establish the sociocultural foundations which were to give rise to this special position.

In the second half of the century, this heritage of democracy and equity survived the severe tests to which it was subjected without fracturing too badly. These tests included prolonged economic stagnation, conflicts between radically differing approaches to the organization of society and the economy –which imperilled political stability for a time– and a coup d'état which put a military Government into power. The strength of the country's sociocultural foundations was convincingly demonstrated after the restoration of democracy in 1985, when Uruguay succeeded in maintaining the position it had traditionally held as the regional leader in social development, this leadership being manifested at this time in the country's indices of poverty and inequality as measured by income distribution, which were low by the standards of other Latin American nations.

The conditions brought about by the return to democracy undoubtedly made it easier to preserve this heritage of equity, and to cope with the new challenges that threatened its survival. The country had to find its place in a globalized world, extend the boundaries of competitiveness and adapt the workings of welfare institutions to the demands of sustained growth within these new parameters, and the main threats stemmed from the consequences of these changes, which affected different segments of society in different ways.

In this section it is contended that, in the last fifteen years of the twentieth century, the country managed to cope with these challenges by maintaining an appropriate balance between the political, social and economic aspects of development, which has led some specialists in these subjects to regard it as an example of successful gradualism.[1] In describing this process as "successful" –in a regional context, of course– we should not overlook the fact that, like all Latin American countries, Uruguay is now being profoundly affected by the serious problems that come with economic restructuring, weak job creation and pressure to deregulate the labour market. In truth, the consequences of these problems are already manifesting themselves as rents in the traditionally integrated social fabric of the country, and in the warnings that are being sounded about the difficulties involved in sustaining its style of balanced growth.

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[1] See the in-depth, comparative analysis of the Uruguayan case in Filgueira and Morães (1999).

II

Uruguay in the Latin American context

Most of those studying equity-related problems agree that Latin America has the most regressive distribution of wealth of any region in the world. The figures for Uruguay, however, set it clearly apart from its regional context (table 1).

The values of the inequality and poverty indices for 1990 and 1997 are lower in Uruguay than in the other countries appearing in the table. Similarly, the indicators showing how the social situation changed in that period reveal that poverty and inequality were reduced to a greater extent there even than in Argentina and Chile, which had higher rates of per capita gross domestic product growth in those years than Uruguay (33.2%, 53.3% and 27.2%, respectively).

In short, Uruguay showed a greater capacity to mitigate the adverse social effects of the liberalization and macroeconomic adjustment processes than other countries in the region.

The good relative performance of Uruguay in the sphere of social justice has its counterpart in the legitimacy that the country's citizens attribute to its democracy and institutions, as table 2 shows. The commitment of the population to the democratic system means that Uruguayan public opinion credits this system with greater legitimacy, response capabilities, utility and responsibility than is the case in most of the other countries in the region. For every one of the statements included in this table that bespeak confidence in and satisfaction with the workings of democracy, and in the weighted sum of percentages of positive responses to each question, Uruguayans show themselves to be more

TABLE 1

Latin America (nine countries): Indices of inequality and poverty

		Inequality[a]	Poverty[b]
Argentina	1990	9.3	16
	1997	9.6	13
	Change	3.2%	-18.8%
Bolivia	1989	12.6	49
	1997	10.8	47
	Change	-14.3%	-4.1%
Brazil	1990	16.3	36
	1996	16.8	25
	Change	3.1%	-30.6%
Chile	1990	11.7	33
	1996	11.8	19
	Change	0.9%	-42.4%
Colombia	1990	10.2	35
	1997	12.2	39
	Change	19.6%	11.4%
Ecuador	1990	7.1	56
	1997	7.4	50
	Change	4.2%	-10.7%
Mexico	1989	9.1	34
	1996	7.7	38
	Change	-15.4%	11.8%
Paraguay	1990	6.2	37
	1996	7.6	34
	Change	22.6%	-8.1%
Uruguay	1990	6.2	12
	1997	4.7	6
	Change	-24.2%	-50.0%

Source: ECLAC (1999).

[a] Quotient between the average incomes of the richest 10% and the poorest 40%.

[b] Percentage of households below the poverty line.

TABLE 2

Latin America (eight countries): Views about democracy, 1995

(Percentage replying affirmatively)

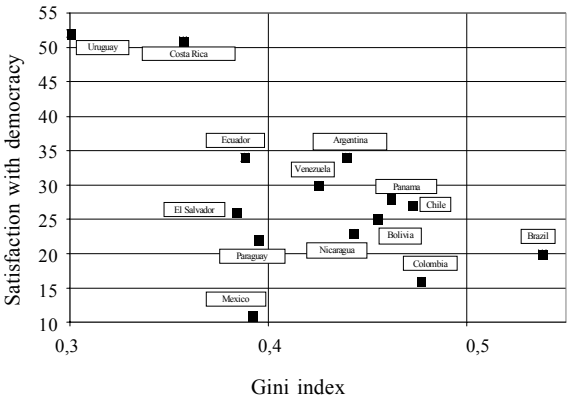
	Argentina	Brazil	Chile	Mexico	Paraguay	Peru	Uruguay	Venezuela
Democracy is preferable to any other form of government	82	48	54	57	58	58	86	64
Are you satisfied with the way democracy works in the country?	53	31	34	24	31	47	59	38
Democracy enables national problems to be solved	59	51	51	52	39	71	63	53
Elections in the country are clean	78	26	82	52	39	64	83	19
Senators and deputies are concerned about what people like you think	19	16	24	24	28	29	38	16
The way you vote can make things different in future	75	53	56	53	62	75	77	52
Unweighted total	366	225	301	223	228	344	406	242

Source: Kaztman (1997), on the basis of data from Basañez, Lagos and Beltrán (1996).

in agreement with and committed to the institutions of democracy than the inhabitants of other countries in the region.[2]

Social justice and adherence to democracy are closely connected. The perception of social injustice or of inequality of opportunities relative to other groups in society tends to weaken the commitment of those affected to the institutions that make these inequities possible. In turn, the lack of trust in institutions makes "the processes of aggregating the preferences of individuals more complex and uncertain and exacerbates conflicts over the distribution of public resources. The economic and social integration of the different groups is more difficult as well, and the State machinery is more likely to become subject to the influence of pressure groups, corruption and inefficiency, all of which helps to perpetuate inequality" (IDB, 1998). Figure 1 shows the correlation between the two phenomena.

FIGURE 1
Inequality and satisfaction with democracy. Fourteen Latin American countries, 1996-1997



Source: Produced by the author on the basis of ECLAC (1999) and Basañez, Lagos and Beltrán.

III

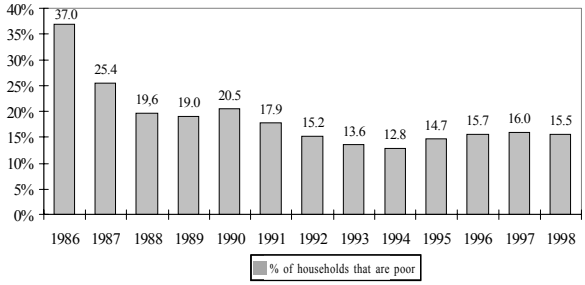
Trends in poverty and inequality since the restoration of democracy

1. Poverty

The general progress of the Uruguayan economy meant that between 1986 and 1997 real average household income increased by over 50%. This growth was accompanied by a significant reduction in poverty[3] in urban areas of the country (figure 2). From 1986 to 1998 the percentage of poor households fell from 37% to 15.5%, while the percentage of indigent households (those whose per capita incomes are insufficient to cover the cost of a basic food basket) initially declined in the early years of the period under consideration, before stabilizing at around 1%.

Figure 3 shows the inverse relationship between changes in national per capita income and poverty. In a country where income distribution is not subject to sudden changes, and where the level of concentration is relatively low, it is not surprising that the fruits of

FIGURE 2
Changes in the poverty level. Urban total, 1986-1998
(Percentages)

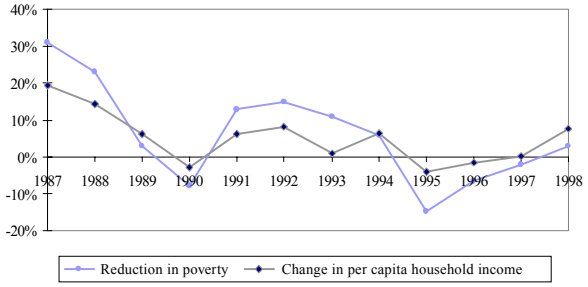


Source: Produced by the author on the basis of National Institute of Statistics (INE) standing household surveys.

[2] The kind of democratic mindset that these responses reveal is the result of cultural patterns that do not crystallize overnight. On the contrary, it has to be nurtured over a long period, becoming entrenched as a result of processes that usually extend over a number of generations and that have profound inertial effects on the political attitudes of citizens.

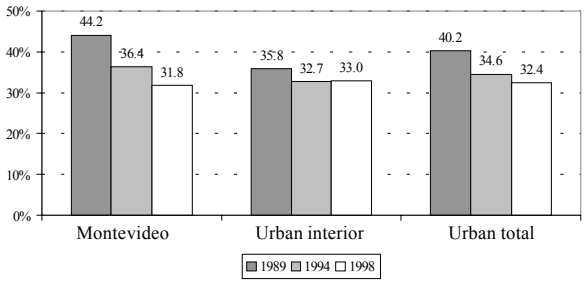
[3] The index of poverty used here is based on estimates of the cost of the basic food basket produced by the Uruguayan National Institute of Statistics, these being based on the results of the Household Expenditure and Income Survey carried out in 1994-1995. Although the tendency is generally the same, this index differs in magnitude from the one used for comparative purposes in the *Social Panorama of Latin America* (ECLAC, 1999), which was the source for table 1.

FIGURE 3
Relationship between growth and poverty. Urban total, 1986-1998
(Percentages)



Source: Produced by the author on the basis of National Institute of Statistics (INE) standing household surveys.

FIGURE 4
Percentage of all poor households containing poor old-age pensioners, 1989, 1994 and 1998
(Percentages)



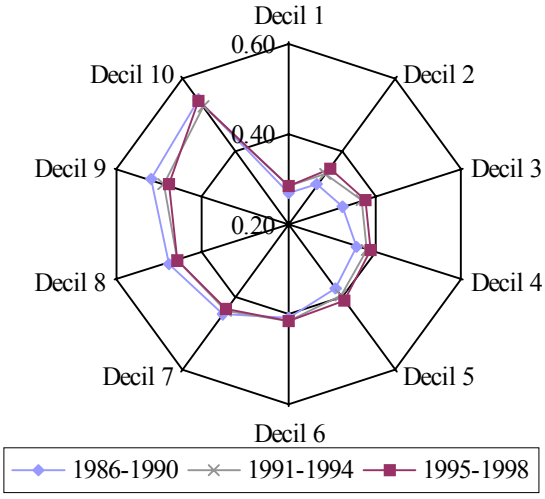
Source: Produced by the author on the basis of National Institute of Statistics (INE) standing household surveys.

growth are quickly reflected in falling poverty levels. The curves of the graph also clearly reflect the "Tequila effect" of late 1994 and its inertial consequences, which were subsequently compounded by those of the crises affecting Russia and South-East Asia.

Apart from the ups and downs of the economy, perhaps the most important single factor behind the fall in poverty was the constitutional amendment passed by the 1989 plebiscite. This amendment provided for the benefits of old-age and other pensioners to be indexed automatically to the average wage index. Since around half of all urban households in Uruguay (49.6% in 1998) have some income from pensions, the change meant that a substantial proportion of poor households containing old-age or other pensioners ceased to be poor. Between 1989 and 1998, in fact, the percentage of poor households containing one or more old-age or other pensioners fell from 40.2% to 32.4% of all poor households. To look at it from a different angle, between 1989 (the year of the plebiscite) and 1998, poverty in urban households declined by 18.4%, while in households containing an old-age pensioner the decline was 32.6% (figure 4).

Family strategies also contributed to the reduction of poverty, mainly through increasing participation by married women in paid work. This mobilization of the family labour force led to an increase in the proportion of family members in the labour market (occupational density) in households in the first five deciles (figure 5). The opposite happened with higher-income households, partly because the rise in pensions enabled households containing pensioners to move up into the higher deciles. Although higher occupational density mitigates the effects of economic crises, it also has negative effects, particularly in poorer households. Given that these

FIGURE 5
Changes in occupational density. Urban total, 1986-1998



Source: Produced by the author on the basis of National Institute of Statistics (INE) standing household surveys.

account for a disproportionate share of the population's biological and social reproduction efforts, when married women carry out paid work their ability to care for and watch over their children is diminished. Furthermore, when children from such households join the labour market at an early age their opportunities for accumulating educational attainments are significantly reduced (Filgueira, 1999).

Other households distanced themselves from the threat of poverty by deciding to limit the size of their families. Between 1985 and 1996, in fact, total fertility

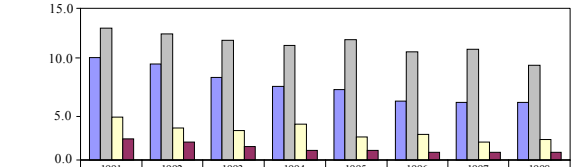
in urban areas fell from 2.89 to 2.60 per woman. Trends of this nature generally reflect an increase in the amount of human capital vested in women and their willingness to make use of it by improving their opportunities in the labour market. In this case, though, the decline in fertility was also seen among categories of women that were more likely to fall into poverty. Fertility rates for those without schooling fell from 3.92 to 2.88, while for those with incomplete primary education they fell from 4.33 to 4.24.[4] To sum up, greater participation by married women in the workforce and a decline in the number of children helped to reduce poverty as measured by per capita household incomes.

In the last fifteen years of the twentieth century, changes in the proportion of households that were poor were accompanied by significant progress in satisfying certain basic needs. Although they do not cover the whole period, the data given in figure 6 show that between 1991 and 1998 major advances were made in respect of access to electricity, piped drinking water in homes, medical cover and better housing conditions.

2. Inequality[5]

As was mentioned at the beginning of this section, the decline in poverty and the improvement in living conditions that occurred over the last fifteen years of the twentieth century could have arisen under different income distribution scenarios. In Uruguay, this distribution remained virtually unchanged throughout the period (figure 7). In fact, the Gini index of per capita income distribution (with rental value) between households[6] fluctuated around 0.41, with a slight tendency to rise, particularly towards the end of the period.[7]

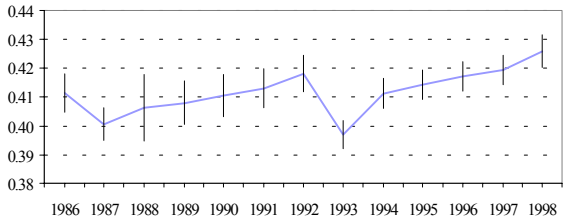
FIGURE 6
Changes in some critical deficiency levels. Urban areas of Uruguay, 1991-1998



	1991	1992	1993	1994	1995	1996	1997	1998
Water	9.4	8.9	7.6	6.8	6.5	5.4	5.3	5.4
Med. cover	12.1	11.7	11.0	10.5	11.1	10.0	10.2	8.8
Infrml hsng	4.0	3.0	2.7	3.3	2.1	2.3	1.7	1.9
Electricity	2.0	1.6	1.2	0.9	0.9	0.7	0.7	0.7

Source: Produced by the Uruguayan Human Development Report (UNDP, in the press) on the basis of data from National Institute of Statistics (INE) standing household surveys.

FIGURE 7
Inequality in Uruguay, 1986-1998
(Gini coefficient)



Source: Produced by the author on the basis of National Institute of Statistics (INE) standing household surveys.

TABLE 3
Urban areas of Uruguay: Income share of household quintiles ranked by per capita income. 1986-1998
(Percentages)

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
1986	5.6	10.4	15.0	21.8	47.3
1987	5.9	10.6	15.2	21.9	46.4
1988	6.0	10.5	14.9	21.4	47.2
1989	5.8	10.5	14.9	21.5	47.3
1990	5.8	10.4	14.9	21.5	47.5
1991	5.7	10.3	14.8	21.4	47.7
1992	5.5	10.2	14.8	21.4	48.1
1993	5.8	10.7	15.3	22.0	46.1
1994	5.6	10.3	14.9	21.8	47.4
1995	5.4	10.2	14.9	22.0	47.5
1996	5.4	10.2	14.8	21.9	47.7
1997	5.4	10.1	14.8	21.7	48.0
1998	5.2	9.9	14.7	21.9	48.4

Source: Produced by the author on the basis of National Institute of Statistics (INE) standing household surveys.

[4] See National Institute for Women and the Family (in the press).
[5] The coefficient of inequality used (Gini) produces different values and trends from the one employed in the *Social Panorama of Latin America* (ECLAC, 1999). The latter was constructed using a methodology that sought to maximize the reliability of the results in order to establish the relative positions of the countries in the aspect under consideration, which meant that the criteria followed had to take account of the limitations of national information sources. The results set forth in this section agree with those of other studies carried out for Uruguay (see Vigorito, 1999, p. 259, table 2B).
[6] Per capita household income was calculated by adding together the different types of income received by households in the form of remuneration from work and capital, pensions, benefits and transfers and an imputed rental value for owner-occupied housing. Domestic servants living in households were not deemed to be members of them for the purposes of these calculations.
[7] The index values for the 1990s are not statistically different from those of the 1980s, except in 1998. In that year, the statistical confidence interval of the estimate, at 95%, does not overlap with those for the 1980s.

A similar pattern is seen when, instead of a synthetic measure like the Gini index being used, changes in the income shares received by households in each of the five per capita income quintiles are tracked over the period. Thus, while the movements seen over the entirety of the period 1986-1998 are small, it transpires that the share of the 40% of urban households with the lowest incomes declined, while that of the richest 20% of households rose (table 3).

IV

Factors determining trends in income distribution

1. Initial considerations

The modest extent of the changes in the income distribution indices may be misleading, as it might suggest that inequality levels are relatively unaffected both by the type of growth and by the major economic and social processes affecting societies.[8] The correct interpretation is quite different. Societies are constantly exposed to forces that shape their structures in more or less equitable ways, and that consequently affect different social categories in different directions and to differing degrees. The categories that are affected adversely seek to counteract these effects using whatever individual and collective resources they can mobilize.

When this view is taken, indicators of income distribution (and of wealth, when adequate information is available) are interpreted rather as the outcome of a complex web of forces set in train by the market on the one hand and by individuals, households and collective actors on the other. As we shall see later on, changes in the market lead to shifts in the profitability of the different factors of production, and thus affect both average incomes and the distribution of income between the different sources from which it derives.

Individuals react to changes in the market by opting, insofar as the opportunities available to them allow, for different courses of action. Within their households, they are involved in decisions about the number of children to have, whether or not to keep them in the educational system when to do so begins to become incompatible with income needs, whether people should enter or leave the household, and with what frequency and level of commitment each member of working age should participate in the labour market. On the institutional level, meanwhile, collective actors struggle among themselves to have a greater say in the way policy instruments are designed and implemented, using their social, political and economic resources to increase or preserve their share in the fruits of growth, or to minimize the portion of costs they bear at times of crisis. All these forces act beneath the surface, shaping the distribution of income and wealth in society.

We shall now take a more synthetic approach to exploring some of the factors that might have affected the distribution of income in Uruguay over the last fifteen years of the second millennium.

2. Determining factors

a) *Liberalization, fiscal adjustment and external upheavals*

Although it is still very early to claim that the new development styles have affected income distribution, some authors have identified an empirical association between the structural reform processes that these styles entail and an increase in inequality (Altimir, 1997).[9] Any attempt to apply this hypothesis to Uruguay would have to take into account the particular characteristics of its structural reform process, including among other things the absence of any significant privatizations and the financial liberalization that was carried out as early as the 1970s.

In any event, between 1985 and 1998 Uruguay pushed ahead vigorously with the external liberalization process and with measures to control the budget deficit. Tariff barriers were lowered, so that the average tariff

[8] Li, Squire and Zou (1998) examined income distribution trends in 45 countries for which there was good quality information covering long periods. They found that most of them (29) did not show discernible tendencies in either direction, while the rest divided equally between rising inequality and falling inequality.

[9] Altimir reached this finding after analysing five countries: Argentina, Brazil, Chile, Colombia and Mexico.

fell from 40.7% to 12.8%[10] (UNCTAD/ECLAC, 1998). In that same period, the overall budget deficit fell from 6.3% to 1.0% of gross domestic product (President of the Eastern Republic of Uruguay, Planning and Budget Office, 1999) and inflation fell from around 70% to some 10%.

Both external liberalization and State reform policies altered the composition of employment. In many of the region's countries, globalization of the economy led to a decline in the relative weight of industry as an employer and as a contributor to national output. In Uruguay, where these processes took place in the period under consideration, the proportion of the total workforce accounted for by industrial workers fell from 20.5% in 1986 to 16.3% in 1998. In other words, almost a fifth of all workers in industry switched to services or went to swell the unemployment rate.

[10] From January 1998 the tariff was raised by three points following an agreement among the Mercosur countries prior to the devaluation carried out by Brazil, the country which requested this increase.

The fiscal adjustment was accompanied by a shrinking of the State machinery. Of thirteen countries for which comparative information is available for the period running from the beginning of the 1980s to the end of the 1990s, twelve, including Uruguay, saw a decline in the percentage of workers in public-sector jobs (ECLAC, 1999). In this period, the proportion of workers employed by the public sector fell from around a quarter of the urban labour force to around a sixth, thus declining by around 30% in terms of relative weight.

These changes could not but affect the distribution of income among households. In point of fact, until the effects of the Mexican crisis began to be felt, average household income had grown continuously over the period (box 1).

If the consequences for social equity of the trade liberalization and fiscal adjustment processes are to be interpreted correctly, they need to be tracked by analysing changes in the structures through which these two phenomena operate, such as the recomposition of different income sources, shifts in the labour market and State policy instruments that are activated to counteract any regressive effects these processes might have.

Box 1

Greater economic openness magnified the effects of the Mexican crisis of late 1994, which resulted in increased unemployment and poverty. Having stood at around 9% from 1986 to 1994, unemployment rates in Uruguay rose to levels of between 11% and 13% as a result of the "Tequila effect". The consequences of such economic crises have a tendency to linger on, in part because businesses become more cautious about entering into contractual arrangements with new workers –an attitude that persists even into periods of economic recovery– and more willing to replace labour with machinery. They can also result in higher school drop-out rates, as family members turn to the labour market to make good the income lost by some adult members, or in early retirement by people who are put out of work at an age when their prospects of re-entering the market are very poor. Generally speaking, situations of crisis force the poor to take decisions that have medium- and long-term implications for the ability of household members to accumulate the assets they need for their well-being.

In evaluating the impact of the Mexican crisis, it has to be appreciated that the differences between the size of the Uruguayan economy and those of its two main partners in Mercosur meant that the indirect repercussions of the "Tequila effect" on Argentina and Brazil were at least as important as its direct effects on Uruguay. This is why that crisis upset the stability of the relatively low indices of inequality and poverty that characterized the Uruguayan situation in the last fifteen years of the twentieth century. As was often pointed out in the analyses carried out during the recessionary decade of the 1980s, poorer households are the first to be affected in periods of recession and the last to benefit from economic upturns, and this leads to asynchrony between the rates at which poverty rises and falls as the vicissitudes of growth dictate. Any reading of the poverty and inequality data for the closing years of the twentieth century also has to take account of the cumulative effects of crises subsequent to the Mexican one (Russia, South-East Asia and Brazil).

TABLE 4

Urban areas of Uruguay: Average income and distribution among recipients. by income source. 1986-1998

	Average income of recipients[a]				Gini index of recipients			
	Work[b]	Pensions	Capital[c]	Total	Work	Pensions	Capital	Total
1986	28.4	12.9	47.4	27.9	0.426	0.409	0.601	0.475
1987	31.8	14.7	56.6	31.5	0.413	0.408	0.608	0.468
1988	34.3	17.3	65.8	34.9	0.413	0.445	0.581	0.476
1989	36.0	16.2	63.8	35.2	0.416	0.430	0.581	0.475
1990	34.3	16.7	64.7	34.0	0.415	0.450	0.600	0.479
1991	36.5	18.0	68.9	36.5	0.426	0.427	0.604	0.480
1992	38.4	20.5	75.6	38.6	0.441	0.426	0.598	0.483
1993	39.2	22.0	68.3	38.6	0.435	0.425	0.544	0.466
1994	41.1	22.9	74.9	40.8	0.449	0.432	0.563	0.480
1995	39.3	22.3	66.3	38.6	0.455	0.434	0.548	0.479
1996	39.1	23.1	65.8	38.1	0.457	0.433	0.543	0.476
1997	38.1	23.9	68.2	38.0	0.458	0.434	0.541	0.476
1998	40.8	25.7	82.0	41.8	0.453	0.448	0.552	0.479

Source: Produced by the author on the basis of National Institute of Statistics (INE) standing household surveys.

[a] Average incomes per recipient are expressed in December 1995 prices.
[b] Earnings include private-sector and public-sector wages and the earnings of own-account workers with or without premises.
[c] Income from capital includes rents, interest and employers' income (profits and remuneration).
[d] In 1998 there were changes to the way the sample for the standing household survey was taken (updating of the sample framework, changes to the replacement criteria and removal of towns with less than 5,000 inhabitants) and these may have led to jumps in the levels of some variables which have not yet been analysed.

b) *Changes in income sources*

Between 1986 and 1997, the country experienced changes in the relative weight of the different sources from which people received income. The average income from old-age and other pensions grew throughout the period. Average income from capital rose up until 1992 and then fell from that year to 1997 (table 4). Lastly, average earnings rose until 1994, but did so more slowly than the other two sources, after which they fell, but again to a lesser extent than income from capital.

Meanwhile, changes in income distribution differed depending on the sources that people obtained their income from. The data show a tendency for the distribution of income to shift in favour of workers and, in the 1990s, of pension holders as well, while the income deriving from possession of capital decreased in relative terms (table 4).

Stability in the distribution of total income among recipients does not necessarily entail a corresponding stability in inequality trends among households, since these ultimately depend on the way individuals are combined in those households.

Some studies have looked at the effect of changes in income sources on total inequality. Thus, Vigorito (1999) analysed the contribution of each source to the change in inequality between 1986 and 1997 by breaking down Theil's entropy index 1,[11] which remained virtually unchanged (it rose to 32.85 in 1986 and 33.05 in 1997). The author referred to found that the influence of wages, old-age and other pensions and the incomes of own-account workers was in the direction of greater inequality over that period, while employers' incomes moved in a direction that reduced concentration, virtually cancelling out the changes in the other sources (table 5).

These results make it clear that the relative weight of the different income sources in Uruguay did not remain unchanged, and that the overall impact on inequality of these sources over time masks changes that cancel one another out.

It would be useful to know what influence the different sources have on overall inequality. Setting out from a breakdown of entropy index 0, Bucheli and Furtado (in the press) quantify the extent to which these

[11] To do this she used Shorrocks' breakdown rule (1982 and 1983) as adopted by Jenkins (1995) and Foster and Sen (1997) and applied it to the distribution of total household income (excluding rental value) between households.

TABLE 5
Urban areas of Uruguay: Contribution of the different income sources to changes in income concentration, 1986-1997

Income sources (without rental value)	Theil index
Waged work	2.79
Own-account work	1.38
Employers' income	-4.43
Pensions	1.22
Other income	-0.76
Total	*0.20*

Source: Vigorito (1999).

sources account for developments in income distribution.[12] It was found that the inequality component attributable to differences between groups of recipients rose from 9.4% in 1986 to 11.7% in 1992, which means that the slight increase in inequality between 1986 and 1992 was due essentially to increasing income disparities between people whose income came from different sources. In fact, while all incomes increased in this subperiod, the rise in incomes deriving from the possession of capital was so great that the top end of the distribution shot up.

Subsequently, from 1992 to 1997, the differences between people receiving incomes from different sources tended to narrow (table 4). The average income of old-age and other pensioners –which stood at the lowest levels– rose in those years by 16.6%, while at the other extreme the income generated by capital fell by 9.8%. Average earnings stayed at intermediate levels. Consequently, the small increase in overall inequality from 1992 onward can be explained by factors unconnected with changes in income sources, since the component of inequality between groups fell (in 1997 it accounted for just 6.6% of inequality) and dispersion within groups increased.

[12] The two usual components are distinguished: the component of inequality attributable to the differences between groups and the component of inequality attributable to the differences within groups. This breakdown makes it possible to measure the explanatory power of a classification: the greater the percentage contribution of the differences between groups, the more powerful will be the classification arrived at to explain total inequality. The classification had ten groups made up of people in households where more than 65% of household income came from a clearly identified source –possession of capital, old-age and other pensions and four occupational categories– and, in the remaining cases, from a combination of different sources.

c) *Changes in the profitability of education*

The analysis of changes in sources showed that the greatest contribution to income concentration was made by wages, and that from 1992 onward the dispersion between recipients of work income increased.

This led on to an examination of changes in the labour market. It was found that the income of households whose heads had tertiary education grew by more than that of households whose heads had only primary education. This development, affecting groups at the top and bottom of the distribution scale, was a force for concentration, and would account for the slight increase in inequality towards the end of the period studied (Bucheli and Furtado, in the press).

In fact, a number of studies on Uruguay show not only that education is the factor that has the greatest influence on income inequality among households,[13] but also that this influence increased in the 1990s. The findings of these studies, which give different values depending on the index and classification used, are set out in table 6.

These results are supported by wage equations calculated for private-sector workers in Uruguay, according to which the marginal profitability of the higher levels of education rose in the late 1990s, increasing the wage differences between workers with different levels of education (Bucheli and Furtado, 2000).

d) *Transfers*

As was noted in point b), changes in the amount of old-age and other pensions have also contributed to the concentration of income. A number of studies show that indexation of these basically resulted in income recipients moving up from "middle sectors to higher ones, and in changes to the demographic composition of the lower deciles" (Vigorito, 1997, p. 17; Bucheli and Rossi, 1994). In this respect, it should be noted that average incomes from old-age and other pensions grew by more than those from any other source of income in the period, and that the Gini index for the internal distribution of income of this type also rose in the 1990s (table 4).

The concentration of old-age and other pensions tended to increase, by contrast with what happened in

[13] Several works show that the influence of other variables is considerably less: the age of heads of household, and whether or not they are working, each account for less than 5% of total inequality, while region and household structure account for around 10% (Machado and Reggio, 1999 and Vigorito, 1999).

TABLE 6
Urban areas of Uruguay: Changes in the component of inequality between groups according to different classifications by educational level
(Percentages)

	1986	1991	1997
Bucheli and Furtado[a]			
Index of entropy 0	18.2	20.5	21.3
Vigorito[b]			
Index of entropy 0	19.2	18.5	24.4
Index of entropy 1	21.5	19.1	26.6
Machado and Reggio[c]			
Index of entropy 0	24.1		26.4
Index of entropy 1	25.5		27.6

Source: Bucheli and Furtado (in the press), Vigorito (1999) and Machado and Reggio (1999).

[a] The classification goes by the educational level of heads of household (0 to 6, 7 to 12, 13 or more years of education) for people in households where more than 65% of income is from work; for those dependent on capital or a combination of sources, openings by educational level were not carried out. The degree of inequality was measured by the distribution of per capita income (without rental value) between individuals.

[b] The classification distinguished between households according to the educational level of their heads: first stage of secondary, second stage of secondary, UTU (Universidad del Trabajo del Uruguay), university, others.

[c] The classification distinguished between incomplete primary education, complete primary, incomplete secondary, complete secondary, UTU, tertiary, others. Inequality was measured by equivalent income distribution between households (with rental value).

the case of other State transfers, such as social allowances and benefits (table 7). Since their share of total government transfers to urban households rose from 74.8% to 92.4% in the period 1988-1998, the net result of these transfers was regressive. This was the case despite major changes in some of the instruments involved, such as family allowances which, while they had a clear equalizing effect, did not suffice to offset the additional concentration produced by pensions, so that the effort made to target social allowances and benefits was not enough to prevent a decline in the portion of transfers reaching the poorest (ECLAC, 1998).[14]

e) *Household strategies*

As was mentioned earlier, it we are to move from looking at the way income is distributed among individual recipients to the way it is distributed among households, we need to consider how individuals are combined in those households. Although in practice income tends to be distributed among households in much the same way as it is among individuals, this is not always so.

Households have considerable room for manoeuvre in mitigating the effects of cuts in the incomes of their main providers: they can raise their incomes by mobilizing the labour force at their disposal and combining different sources of income, they can make decisions about family size by changing their plans about the number of children to have or delaying pregnancies, and they can join forces with other family members in order to raise their average income.

In accordance with a general tendency in Latin America, the main strategy used by lower-income Uruguayan households was to increase their occupational density (figure 4) by bringing married women into the labour market (ECLAC, 1998 and 1999). Vigorito (1999) has demonstrated that increased participation by women in the labour market led to a rise in their contribution to household income (from 12% in 1986 to 15.9% in 1997), while their contribution to inequality was greater, as their incomes from all sources showed a higher degree of dispersion than was the case with men.

[14] Although the rise in the value of retirement and other pensions had a regressive effect, any assessment of the overall effect of the changes on the well-being of the population needs to take account of the contribution these made, against the background of an increasingly uncertain labour market, to the stability of household incomes. This increased stability does not just benefit pensioners and those who are not pensioners but live with one or more of them, but can also have a significant effect in relieving people's concerns about their parents' subsistence, even when they do not live in the same household as them.

TABLE 7

Urban areas of Uruguay: Composition and distribution of government transfers by per capita income quintiles, 1988, 1991 and 1998
(Percentages)

	Pensions	Social allowances	Benefits	Total transfers
		1988		
Composition	74.8	4.4	20.8	100.0
Distribution				
Quintile 1	8.6	29.5	16.7	11.2
Quintile 2	15.1	25.3	17.4	16.0
Quintile 3	18.2	19.5	18.2	18.3
Quintile 4	21.6	14.5	20.1	21.0
Quintile 5	36.4	11.2	27.6	33.5
Quintile 6	100.0	100.0	100.0	100.0
		1991		
Composition	89.1	3.5	7.4	100.0
Distribution				
Quintile 1	8.9	29.2	19.3	10.4
Quintile 2	14.9	21.5	16.3	15.2
Quintile 3	19.1	20.7	16.0	18.9
Quintile 4	22.7	14.5	13.0	21.7
Quintile 5	34.4	14.0	35.4	33.7
Quintile 6	100.0	100.0	100.0	100.0
		1998		
Composition	92.4	0.9	6.8	100.0
Distribution				
Quintile 1	6.2	37.7	23.2	7.7
Quintile 2	12.5	26.6	23.4	13.3
Quintile 3	17.0	17.2	22.4	17.4
Quintile 4	23.1	13.1	16.1	22.6
Quintile 5	41.1	5.4	15.0	39.1
Quintile 6	100.0	100.0	100.0	100.0

Source: Produced by the author on the basis of data from National Institute of Statistics (INE) standing household surveys.

V

The political and institutional framework and public policies

1. How reform is implemented: gradualism and sequences of reform that do not result in concentration

One of the most important aspects of the political and social changes introduced in Uruguay has been their incremental and eclectic nature.[15] If the position of Uruguay is considered in its regional context, this pattern of development, viewed over the long term, seems to have had more virtues than defects. We say "seems to have had" because the arguments that follow cannot easily be subjected to rigorous empirical tests, and contain a high degree of speculation.

[15] Eclectic in that on many occasions they have departed from the orthodox adjustment model, or what has come to be known as the Washington Consensus.

Like the other countries in the region, Uruguay had to cope with the obsolescence of an old inward-looking, State-led development model. At the same time, the country faced the difficult task of converting to an export-oriented model in which the market plays a central role in the allocation of resources, entailing reforms in at least five key areas: financial liberalization, trade liberalization, fiscal reform, privatization and reform of the State machinery, and labour market deregulation.

The Inter-American Development Bank (IDB) has devised an index to measure progress with these five areas of reform in Latin America, the values it produces being used to estimate the relative speed with which they are being applied in each country (IDB, 1997). In the case of Uruguay, the data from this index (figure 8) record a difference of 18% between the beginning and end of the period 1985-1995 in the country's scores for progress in structural policies. This small difference –the lowest of any of the countries for which information is available, including those such as Chile and Colombia which started off in 1985 with scores similar to Uruguay's– make the country an example of gradualism in the region (IDB, 1997, appendix 5).

In addition to the reform areas taken by IDB, social reform also needs to be considered. The approach taken by Uruguay in this area has also been gradualist and, as will be seen later on, particularly eclectic.

The gradualism characterizing Uruguay has at least two essential merits: it helps protect the interests of subordinate groups, and it bolsters democracy. In the first case, this is because the basic resources of the least powerful sectors –mass mobilization and organization– are more effective in democratic negotiations and are weakened when shock policies or sudden reforms are applied.

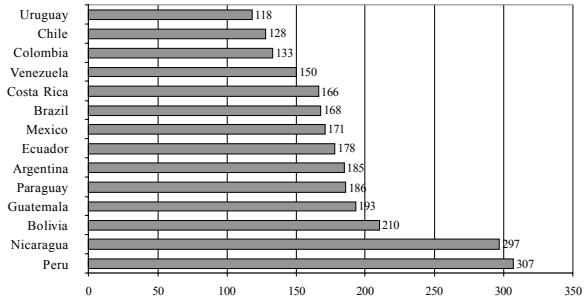
The second merit of gradualism is that it strengthens and reaffirms the power of democratic mechanisms to take difficult decisions about development models and problems that are ultimately to do with distribution. Or to look at it from the negative side: shock policies tend to inhibit the development or creation of a democratic culture in which the legitimacy of decisions derives from the way they are taken, and not from their results.

The sequence of reforms in the country also has its virtues. To put it in a highly condensed form, it may be said that the essential role of the reforms is to "expose to the blast of competition" actors who previously operated in a "protected and regulated environment". Depending on the reform that is applied, certain actors will be more exposed to this "blast" than others. By way of example: whereas lower tariffs force protected companies (i.e., capital) to confront international competition, labour market deregulation increases competition for labour rather than capital. Consequently, the sequence of reform determines the scope those affected have for transferring costs to other actors. Another example: if tariff reforms and labour market deregulation take place at the same time, companies can transfer a large part of their costs to wage earners by reducing wages and benefits and reducing staff levels at little cost to themselves.

FIGURE 8

Change in the index of structural policies between 1985 and 1995

(1985=100)



Source: Produced by the author on the basis of IDB (1997).

The sequence of reforms in Uruguay was ideal in terms of distribution. Financial, fiscal and foreign trade reforms were the first to be carried out. With the exception of fiscal reform, whose effect on companies and workers is unclear, the other two primarily affect capital, forcing it to absorb part of the restructuring costs of the development model. If it is considered that the labour market and social reforms were the last to be applied, and that privatization was a failure, the reform sequence looks like a particularly progressive one. It was wage earners and sectors depending on the State that were the last to be deprived of protection of various kinds, and this reduced the scope of those controlling capital to transfer costs to them. The information provided over the course of this section seems to be consistent with these ideas. As was pointed out earlier, it was in respect of income from capital that concentration declined most over the period, since capital now has to operate in a common competitive environment, whereas previously it extracted its advantages and profit from stratified protection regimes.

2. The substance of reform: eclecticism and limits on the market

Although this is another area where argument does not easily lend itself to empirical proof, it seems reasonable to say that the preservation of equity in Uruguay was contributed to by political decisions relating not just to the pace and sequence of the reforms, but to their substance as well.

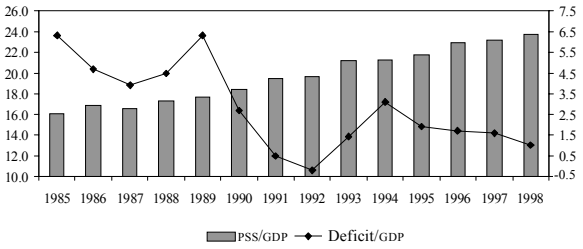
In a series of studies aiming to achieve a better understanding of the roles that have been played by democracy, as a system that enables the population to have a voice and a vote in struggles over distribution, and by the State, acting as the guarantor and shield of the weakest to improve the distribution of prosperity, Fernando Filgueira has carried out an exhaustive analysis of the social and political mechanisms mobilized, and the specific characteristics of the sectors and the strategies of the groups involved, at different stages of reform and of efforts to privatize public-sector companies in Uruguay.[16]

These analyses show that the socio-political structure of Uruguay has proved reluctant to adopt the kind of adjustment that has been applied in the region. The following observations may be made:

i) In the period under consideration, most public-sector enterprises and services stayed in the public sphere, except in the area affected by social security reform. Even where this reform is concerned, while it resulted in a system that was clearly different from the old one, it is quite dissimilar to other social security models such as that of Chile, in that it has remained under State control and committed to distributive ends that do not feature so prominently in other instances of reform.

ii) The country achieved a large reduction in the budget deficit, along with rising figures for public social spending (figure 9). A different course of action, involving a structural adjustment process that tends to reduce such spending, appears to have come up against numerous difficulties in the last fifteen years of the twentieth century. The particular path taken by Uruguay has been strongly upheld by a political process whose negotiating and consensus-seeking systems tend to signal that a great many balances need to be struck if governments are to carry through the set of reforms on their agenda. Above all, there is a need to maintain high levels of spending on those public policies that have been crucial to the shaping and development of society and that have been largely responsible for the progress made by the country in terms of social equity.

FIGURE 9
Public social spending (PSS) and the budget deficit in Uruguay as a proportion of GDP, 1985-1998



iii) No formal changes were made to the way the labour market operated, but there were substantial de facto changes which made employment less secure. More important still were changes to collective bargaining methods, which underwent substantial decentralization.

iv) There was strong resistance to the dismantling of the education system. The reform carried out in this system differed greatly from market-oriented models, being decidedly statist, universalist and strongly redistributive.

The continued existence of public goods that follows from what has been said in the four paragraphs above preserved the conditions that have traditionally contributed to the ability of Uruguayan citizens to make their "voice" heard clearly and often. This acts as a corrective mechanism, inhibiting the use of market options as a "way out".[17]

3. The socio-political keys to an incremental and eclectic approach to reform

As was noted earlier on, the peculiar characteristics of Uruguay in the context of Latin America manifested themselves during the reform process as a greater ability to mitigate the negative consequences of the new growth style, mainly by applying reforms selectively and controlling the pace and thoroughness with which they

[16] See Filgueira and Morães (1999), Filgueira and Papadópulos (1997) and Filgueira and Filgueira (1998).

[17] The ideas of "voice", "way out" and "loyalty" were developed by Hirschman (1970).

were introduced. We shall now briefly consider what are the central characteristics of Uruguayan social and political organization that enable us to understand both the pace and the substance of the country's structural reforms.

Despite the major economic and social changes that the country underwent between 1970 and 1985, at the end of this period the key actors that had helped shape the old model, and that to a large extent had benefited from it, still had their place in the social structure of Uruguay. In 1985, the unions whose members were urban workers in domestic industries, the protected industries themselves, old-age and other pensioners covered by the social welfare system and the large group constituted by civil servants were still the main actors in the country's distributive struggles. To implement any major change, it was necessary to negotiate, synthesize and incorporate the interests of these actors in the context of a restored democracy. This is perhaps one of the most crucial aspects differentiating Uruguay from, for example, Chile. In the latter country, the bulk of the structural changes were implemented under a dictatorial regime, and the socio-political system with which the restored democracy had to deal retained few of the actors and characteristics of the old development model. In Uruguay, by contrast, the survival of the old system, and its transition to democratic conditions, meant that any losers from the structural transformation could negotiate the costs they would have to pay and the time they would have to do it in.

To this old social structure, which had to be reckoned with when the costs and benefits of transforming the development model came to be negotiated, had to be added the political structure needed for the demands of actors to be translated into concrete policies.

Politically, Uruguay had and has the most highly institutionalized democratic process of any country in Latin America, owing to two prominent features of its political dynamic: a long-established and highly institutionalized party system, and a deep-rooted political culture of consensus-building. These two factors have had a range of effects on the political process, in which negotiations between parties and the numerous ties that these have with different agents in civil society have given a pluralistic form to dealings between decision-making agents.

On the one hand, these two factors have shaped a particular kind of relationship between those involved with the technical side of policy-making and the party elites, as a result of which, and by contrast with other countries in Latin America, the links between technical and political actors have always been channelled completely through the intermediary of solid political parties. On the other hand, the Uruguayan party system has always been able to deal with demands expressed as general interests in the provision of public goods, or as private interests, chiefly in the way it responds to corporate pressure from the unionized workforce and from industrialists.

In the long term, the strong political intermediation to which technical and specialist disciplines are subject, and the arbitration capabilities evinced by the parties in their system of responses to private and general demands, have shaped a democratic system characterized by permanent negotiation between political and social actors.[18] Consequently, what is surprising about the Uruguayan process in the long term is its ability to bring about major transformations in a context of democracy and pluralism (O'Donnell, 1993). In addition, a range of characteristics in the institutional framework and the political system have combined with this tradition of gradualism to give the substance of the reforms a stamp that, in economic terms, is markedly anti-liberal, so that while the role of the State as an allocator of resources has been moderated, in no case has it been replaced by a pure market system. It should be emphasized that this situation has arisen in an international and domestic context which is strongly conducive to the adoption of a purely orthodox model, but that the social and political structures have played an effective intermediary role in guiding these pressures.

The Uruguayan experience with structural reform shows that the degree to which these reforms are introduced, and the models used to do so, rather than international pressure and changes to production systems, are what determine the tendency of countries to implement neoliberal reform processes and withdraw the protection of the State. In other words, the likelihood of these adjustment and transformation models being applied is directly proportional to the degree of socio-political exclusion traditionally affecting the poorer sections of society. In Uruguay, we have a State penetrated throughout by party structures, a party

[18] Of course, the long-term characteristics described here have been distorted by temporary situations of great impact. Thus, the years of authoritarian rule (1973-1984) were a time when citizens experienced very marked political and social exclusion. This, however, did not sharply reverse the prevailing relationship between technicians and policy, which shows that the structure was stronger than the circumstances. Nor could authoritarian rule reverse the gradualist tradition, despite its discretionary power to implement reforms.

system that is accessible to the poorer sections of the population, and a society that has received protection and benefits from the State on a generous scale. Although, as this article has stressed, Uruguay has made major changes to its development model and to the role the State plays in this model, the costs and benefits of these changes have been distributed far less inequitably than in the case of other Latin American countries.

Among the social and political characteristics that the country displays, there is a political and social culture rooted in a past that has produced a country without major social, political, ethnic or even economic distances: a country of proximities, as Real de Azúa would put it. Its heritage includes reserves of altruism and low tolerance to extreme inequalities, attributes without which the social and political structure of Uruguay would not have been in a position to maintain, in an international context of increasing concentration and inequality, the essential identities of a society whose ideal for itself is equality and integration.

VI

Final reflections. The challenges to Uruguayan equity in the third millennium

Given the need for continuous readjustment in the face of the upheavals unleashed by globalization, everything seems to indicate that a great deal of time will be needed for national economies to settle down to a viable, stable state. As was mentioned in the introduction, experts on the subject agree that under the new conditions the main problems will revolve around the weakness of job creation and the pressure exerted by the forces that are acting to roll back the gains made in the labour market. Uruguay is not proof against the socially destabilizing tendencies that are being unleashed in this way, and this undoubtedly raises major new challenges for the maintenance of equity.[19] Indeed, given that the measures that will have to be designed and implemented will be at the core of the struggle over distribution, efforts to address the new problems of employment will involve entering the "hardest" areas of social policy (Kaztman and Gerstenfeld, 1990). The resultant need to couple together very divergent interests will test the reserves of solidarity of Uruguayan society, as well as the capacity of its institutions to generate around these issues the wide base of political support that will undoubtedly be needed.

Uruguay's preparedness for coping with these challenges and for retaining its position of leadership in the region where social development is concerned will depend on the capacities of the country's people and the efficiency and effectiveness of its institutions, the threshold beyond which its citizens will not tolerate inequality and their willingness to support the needful corrections when inequality exceeds the thresholds of tolerance. It may be said that the historical legacy of social justice and democracy in Uruguay, crystallized in the country's basic structures (market, property, State, etc.), has shaped the living conditions and attitudes of its people, making them intolerant of inequality and endowing them with considerable reserves of altruism and solidarity.[20] The results of these values in practice are seen in the support given to the political and institutional mechanisms that come to the defence of the weakest.[21]

Attitudes of solidarity are also sustained, at the least, by an ability to empathize which enables people

[19] Among the greatest of the influences for concentration associated with globalization is the improved profitability of factors that can cross national boundaries, such as capital and highly qualified human resources. Big companies, and transnationals in particular, which make more intensive use of these factors, will show a growing ability to take advantages of the economies of scale generated by globalization both in trade and in the financing of production activities. In turn, greater scope for relocating production will undermine workers' negotiating positions and make their incomes more unstable by increasing the vulnerability of these to fluctuations in demand.

[20] The idea of a reserve of altruism is discussed in Paci (1998).

[21] Another set of motivations that may give rise to this support springs not from the aversion to inequality, but from fear of the externalities of social inequity: political instability, weakening of the legitimacy of institutions and the consequent difficulty of mobilizing public opinion in support of plans for change, in the face of public insecurity, etc.

to place themselves in the situation of others and understand how serious or otherwise their problems are, and by a feeling of moral obligation which makes those who possess it act for the benefit of others.

These feelings, abilities and attitudes are refreshed and restored daily through informal, face-to-face contact between people of different social origins in situations that are not constrained by the hierarchies inherent in market relationships. The more frequent and intense the contacts, the stronger the feelings will be. By contrast, all processes that tend to reduce the opportunities for informal contacts between the social classes tend to weaken feelings of solidarity and raise the threshold of tolerance for inequality.

The literature dealing with these issues has identified a number of processes that reduce the likelihood of such informal contacts taking place between classes. The most important take place in the spheres of housing, basic services and travel, shopping and recreation.

In the first of these spheres, residential segregation leads to people with similar socio-economic levels being concentrated in the same neighbourhoods. The extreme manifestations of this segregation are rich ghettos and poor ghettos. Large Latin American cities now contain neighbourhoods inhabited by middle-income sectors with homogeneous characteristics. The spatial polarization of social classes in cities is being compounded by the appearance of what are known as "fortified enclaves", housing estates that are insulated from their immediate geographical environment by physical barriers and sophisticated security technologies; at the same time, some poor ghettos also erect barriers against representatives of the society that operates outside their borders. Although these processes are at an embryonic stage in Uruguay, a recent study shows that between 1985 and 1995 the social composition of individual neighbourhoods became more homogeneous, which meant that heterogeneity between neighbourhoods also increased.

In the second, the segmentation of basic services is another of the factors that undermine a country's reserve of solidarity. Because of its crucial importance in enabling people to take advantage of opportunities for social mobility, educational segmentation has received particular attention. When middle-income sectors abandon State schooling, this is deprived of a "voice" in the struggle to maintain its quality, while at the same time these sectors lose the incentive to pay high taxes for this purpose.[22] In addition, though, this deprives poorer children of contacts that help inculcate middle-class attitudes and aspirations (for example, the belief that efforts to learn are rewarded by achievement and that it is therefore worthwhile to defer immediate gratifications and invest in the long-term accumulation of human resources). In recent years, there has been an incipient movement towards educational segmentation in Montevideo (but not in the urban interior of the country), with a growing proportion of children and young people from the highest income deciles now attending private establishments, while the great majority go to free State establishments (Kaztman, 1997); fortunately, these tendencies are being counteracted by an ambitious educational reform designed to improve the coverage and quality of public-sector schooling. Similar considerations could be adduced in respect of the segmentation of other basic services, such as health care and, more recently, public security.[23]

Places of transit, shopping and recreation and leisure are the third area of informal contacts between the classes which could be affected by middle-class abandonment. These include places as diverse as bars, small neighbourhood shops, beaches and popular entertainments such as football and carnivals.

By distinguishing between these three spheres, the aim is to highlight the variety of paths whereby multi-class sociability can be promoted and the powerful tendencies towards privatization and the isolation of the classes can be counteracted.

When the processes of segregation and segmentation come together in the three areas referred to, there are sections of society that begin to be pushed, without their wishing it, to the margins of the sectors that represent the mainstream of society. This isolation encourages the consolidation of marginal subcultures, social exclusion and mechanisms that perpetuate poverty between the generations.

Because the urban spaces where the different classes meet together in an informal way are declining so slowly, the consequences of this for social integration generally pass unnoticed by most citizens. As a result, these spaces are usually undervalued as factors of integration and as sources of renewal for a country's

[22] As Barry argues, approval of high taxes makes it possible to improve the quality of collective services while reducing the resources available for higher-income groups to invest in private services, all of which discourages abandonment of public services (Barry, 1998, p. 23).

[23] The motor car, perhaps the paramount symbol of social mobility, is increasingly distancing the middle classes from the hazards and adversities of public transport and the informal sociability that its use tends to encourage.

reserves of altruism, solidarity and aversion to inequality. The effects of this decline, however, will come out sooner or later, sometime in a violent, anomic and unexpected way, through the socially disruptive correlates of a poverty that is marginalized by the concentration of want and by progressive isolation from the mainstream of society. The response of the middle classes is to distance themselves from the public places and services used by the "dangerous classes", whose modes of behaviour, developed in isolation amid general want, are viewed by the other classes as exotic and alien. The desertion of the middle classes merely highlights the decline of public spaces, which narrows the field of experiences capable of stimulating the capacity to empathize with less well-off sectors and the feeling of having a moral obligation towards them, thus raising the threshold of tolerance for inequality.

The objective of strengthening social integration in the cities by promoting public spaces where the different classes can come together may appear to lie outside the capabilities of State policies, partly because the resources that would have to be employed might be required for other priorities on the social agenda linked to poverty relief. Certainly, this perception would be correct in many of the region's major cities, where residential segregation, segmentation of services and the abandonment by the middle classes of public spaces in which informal contact can take place between the classes have reached such an advanced stage that the idea of halting or reversing them in the short or medium term seems to be completely unrealistic. This is not the case, however, in Uruguay, where these processes are incipient and the great bulk of society does not seem willing to allow public goods to deteriorate, especially if people come to realize that such a deterioration also entails the weakening of a heritage of social justice and democracy which is taken for granted as a major feature of national identity.

Besides, many social integration initiatives have been undertaken in the cities of North America and Europe –either specifically for this purpose or as part of sectoral policies– entailing urban management measures, the selection of beneficiaries for subsidized housing projects, measures to preserve the quality of public services and the promotion of urban spaces which encourage informal contacts between the classes. Out of the wide range of urban social integration initiatives which have proved to be successful, advantage can be taken of those which are best suited to the resources and the special characteristics of Uruguayan society.

Bibliography

Altimir, O. (1997): Desigualdad, empleo y pobreza en América Latina: efectos del ajuste y del cambio en el estilo de desarrollo, *Desarrollo económico*, vol. 37, No. 145, Buenos Aires, Institute of Economic and Social Development (IDES).

Barry, B. (1998): *Social Exclusion, Social Isolation and Distribution of Income*, Case paper, No. 12, London, London School of Economics.

Basañez, M., M. Lagos and T. Beltrán (1996): Reporte 1995: encuesta Latinobarómetro, Santiago, Chile, *mimeo*.

Bucheli, M. and M. Furtado (in the press): *La contribución de las distintas fuentes de ingreso a la evolución de la desigualdad en el Uruguay urbano 1986-1997*, Montevideo, ECLAC office in Montevideo.

_____ (2000): La evolución de la participación de las fuentes de ingreso en Uruguay (1986-1997), paper presented at *Seminario de Economía Social*, Montevideo, University of the Republic, Department of Economics, March.

Bucheli, M. and M. Rossi (1994): *La distribución del ingreso en Uruguay 1984-1992*, Document No. 10, Montevideo, University of the Republic, Department of Economics.

Bucheli, M. (1997): *Equidad en la asignaciones familiares de Uruguay*, Montevideo, ECLAC office in Montevideo .

ECLAC (Economic Commission for Latin America and the Caribbean) (1998): *Social Panorama of Latin America, 1997*, Santiago, Chile.

_____ (1999): *Social Panorama of Latin America, 1998*, Santiago, Chile.

Filgueira, F. and J.A. Moraes (1999): *Political Environments, Sector Specific Configurations and Strategic Devices: Understanding Institutional Reform in Uruguay*, IDB Working Paper series, No. R-351, Washington, D.C., Inter-American Development Bank (IDB).

Filgueira, F. and J. Papadópulos (1997): Putting conservatism to good use? Long crisis and vetoed alternatives in Uruguay, D.A. Chalmers and others (eds.), *The New Politics of Inequality in Latin America*, Oxford, U.K., Oxford University Press.

Filgueira, C. and F. Filgueira (1998): Taming market reform: The politics of social state reform in Uruguay, Montevideo, *mimeo*.

Filgueira, C. (1999): Vulnerabilidad, activos y recursos de los hogares: una exploración de indicadores, R. Kaztman (coord.), *Activos y estructuras de oportunidades: estudios sobre las raíces de la vulnerabilidad social en Uruguay*, Montevideo, ECLAC office in Montevideo.

Foster, J. and A. Sen (1997): *On Economic Inequality after a Quarter Century*, Oxford, U.K., Clarendon Press.

Hirschman, A.O. (1970): *Exit, Voice and Loyalty: Responses*

to Decline in Firms, Organization and States, Cambridge, Massachusetts, Harvard University Press.

IDB (Inter-American Development Bank) (1997): Latin America after a decade of reforms, *Economic and Social Progress 1997 Report*, Washington, D.C.

_____ (1998): América Latina frente a la desigualdad, *Progreso económico y social en América Latina. Informe 1998-1999*, Washington, D.C.

Instituto Nacional de la Familia y de la Mujer (in the press): *Mujer y estadísticas*, Montevideo.

Jenkins, A. (1995): Accounting for inequality trends: Decomposition for the UK, 1971-1986, *Economica*, No. 62.

Kaztman, R. (1997): Marginality and social integration in Uruguay, *CEPAL Review*, No. 62, LC/G.1969-P, Santiago, Chile, ECLAC.

Kaztman, R. and P. Gerstenfeld (1980): The complexity of evaluating social development, *CEPAL Review*, No. 41, LC/G.1631-P, Santiago, Chile, ECLAC.

Li, H., L. Squire and H.F. Zou (1998): Explaining international and intertemporal variations in income inequality, *The Economic Journal*, vol. 108, No. 446, Oxford, U.K., Blackwell Publishers.

Machado A. and I. Reggio (1999): Incidencia de la reforma en el mecanismo de ajuste de las pasividades de 1990 sobre la distribución del ingreso de los hogares. Uruguay: 1986-1997, Montevideo, University of the Republic, monograph for Economics degree.

O'Donnell, G. (1993): *On the State, Democratization and Some Conceptual Problems: A Latin American View with Glances at Some Post-Communist Countries*, Indiana, University of Notre Dame.

President of the Eastern Republic of Uruguay, Office of Planning and the Budget (1999): *Datos económicos y sociales del Uruguay*, Montevideo.

Paci, M. (1998): Il welfare state come problema di egemonia, *Stato e mercato*, No. 22, Rome.

Shorrocks, A. (1982): Inequality decomposition by factor components, *Econometrica*, vol. 50, Evanston, Illinois, Econometric Society.

_____ (1983): The impact of income components on the distribution of family income, *Quarterly Journal of Economics*, vol. 98, Cambridge, Massachusetts, Harvard University.

UNCTAD/ECLAC (1998): Política comercial a nivel país y los acuerdos de la Ronda Uruguay, Montevideo, January, *mimeo.*

UNDP (United Nations Development Programme), Office in Uruguay (in the press): *Informe de desarrollo humano de Uruguay*, Montevideo.

Vigorito, A. (1997): *Una distribución del ingreso estable. El caso de Uruguay 1986-1997*, Montevideo, University of the Republic, Institute of Economics.

_____ (1999): La distribución del ingreso en Uruguay entre 1986 y 1997, *Revista de economía*, vol. 6, No. 2, Montevideo, Central Bank.

The adjustment strategies *of Mexican ejidatarios* in the face of *neoliberal reform*

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Since 1988 the ejido sector in Mexico has been buffeted by a series of policy changes and exogenous shocks that have brought into question the agricultural viability of the sector as a whole. These changes –trade liberalization, privatization, falling subsidies, the abolition of price controls, macroeconomic shocks, devaluation and momentous changes in the legal framework governing land use in the ejido– have led to a radical reordering of the policy framework and incentive structure under which the farmers of these communal lands operate. The cumulative effect of these reforms has theoretically been to give ejido producers the freedom and flexibility to adjust to changes in the incentive structure and emerge as viable, competitive producers in an increasingly globalized economy. Unfortunately, the hoped-for benefits first of sectoral reform, then of macroeconomic reform, have not materialized. The author provides a brief history of the ejido sector and the Salinas/Zedillo reforms. He then discusses in broad terms the responses that ejidatarios have made to these neoliberal reforms and the subsequent macroeconomic crisis. This is followed by a detailed look at the different components of this changing situation: land accumulation, risk-averse agriculture, scarcity of credit, livestock accumulation, diversification into off-farm activities and income structure. The principal tools of analysis are categorization of households on the basis of changes in these different components and comparison of the characteristics and asset positions of households engaged in different response strategies. The article concludes by analysing the consequences of these response strategies for State development policy in the rural sector in Mexico.

I

Introduction

The characteristics of the ejido sector on the eve of the twenty-first century differ greatly from those with which it began over 60 years ago. The Mexican Land Reform, with its unique community (or ejido) land grant mechanism, was born of peasant demands for land brought on by the Mexican Revolution. While the importance of community and an attachment to the land remain, the predominantly agricultural economy of the 1930s has given way to a tremendously diversified one with an array of household income generation strategies. Today, ejidatarios and their children are just as likely to be working in off-farm wage activities such as the inbond assembly industry, or in a restaurant in Los Angeles, as growing maize and beans on the family plot. Almost half of all ejido household income derives from sources other than agricultural or livestock production, while over 60% of all households have some family member working off farm.

While the shift towards income diversification has been a gradual one, since 1988 the ejido sector has been buffeted by a series of policy changes and exogenous shocks that have brought into question the agricultural viability of the sector as a whole. These changes –trade liberalization, privatization, falling subsidies, the abolition of price controls, macroeconomic shocks, devaluation and momentous changes in the legal framework governing land use in the ejido– have led to a radical reordering of the policy framework and incentive structure under which ejido producers operate.

The cumulative effect of these reforms has theoretically been to give ejido producers –representing over 75% of all agricultural producers and 70% of national maize production– the freedom and flexibility to adjust to changes in the incentive structure and emerge as viable, competitive producers in an increasingly globalized economy. Unfortunately, the hoped-for benefits first of sectoral reform under President Salinas, then of macroeconomic reform under President Zedillo, have not materialized.

Utilizing 1994-1997 panel data from a national survey of ejido producers, we analyse the way households have responded to these changes. From the data, it is evident that most producers have chosen to cope, rather than compete, in agriculture. What this coping entails is staying in maize and fodder –and, in the case of larger, modernized farms, increasing the area of these crops under cultivation– rather than expanding into higher value crops. This has been accompanied by further diversification into off-farm waged and own-account activities, and particularly migration to the United States, as well as increases in cattle stocks. For ejidatarios with small and medium-sized farms, off-farm activities have come to be the primary source of income.

What these tendencies have in common is that they are part of a risk-averse, or risk spreading, complementary income generation strategy in the face of uncertainty and non-existent or incomplete markets. Limited access to agrarian institutions providing credit, technical assistance and so on, combined with severe output price risk brought on by macroeconomic instability, makes the production of relatively low-risk and low-cost maize more attractive, despite the steady decline in its real price. The lower returns and heightened uncertainty associated with agricultural production mean that ejido households are increasingly diversifying into off-farm working activities, though relatively few leave agriculture altogether.[1]

A portfolio diversification strategy of this kind enables households to spread income risk among a variety of income generating activities. In certain cases, these off-farm activities may also ease the credit and liquidity constraints faced by producers, although in most instances the income from them appears to be consumed or invested in livestock holdings. Furthermore, leaving off-farm activities aside, those households that have scope to adjust their agricultural strategies are decidedly better off then those that do not have this room for manoeuvre, even if they are expanding

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[1] Risk aversion in agricultural strategies does not mean that ejidatarios are not taking risks, as these are implicit in diversification into off-farm activities, particularly international migration.

into low-risk, low-return crops. Lastly, given the high cost or non-existence of formal institutions in the ejido sector, livestock production can operate as a savings or insurance mechanism as well as an important source of on-farm consumption.

Our conclusions are, firstly, that the predominance of risk-averse agricultural strategies among ejido households means that Mexico is losing its chance to capitalize on the opportunity offered by reform of Article 27. Unfortunately, the conditions are not in place for producers to use their newly acquired land assets productively. While the withdrawal of inefficient producers from agriculture was an explicit component of the reforms, poor incentives and an institutional vacuum threaten the existence of many potentially viable producers. Lacking profitability, these producers are forced to enter the labour market or migrate to urban centres and the United States. Wholesale diversification of this sort clearly does not constitute a permanent solution for Mexican rural development.

Secondly, despite the negative incentive structure and patchy government support, those households that have adequate levels of agricultural assets, and thus the scope to achieve at least partial adjustment through agriculture, are clearly better off then those that do not have these resources. Studies in this area have shown that ejido producers can respond if credit and liquidity constraints are eased. Thus, potentially large rewards could be reaped if government were to take action to revitalize agrarian institutions and services that can reduce the risk and enhance the productivity of on-farm activities.

On the other hand, the complexity and diversity of the ejido sector suggest that the correct policy response is one that encompasses not just agricultural development, but rural development more generally. Meeting the challenge of reducing rural poverty, stemming the flow of migrants to urban areas and increasing the welfare of rural inhabitants will entail not just reducing risk and raising productivity in agriculture, but also providing the framework for an integrated rural development strategy. This would include measures to increase human capital, infrastructure improvements to attract investment and provide better communications and, above all, jobs.

The analysis carried out here is based on data taken from a nationally representative sample of ejido households. Panel data were collected from 1,287 households, covering 261 ejidos, at two points in time, the spring and early summer of 1994 and 1997.[2] The survey covers a wide array of household assets including land, livestock, machinery and education, as well as household demographics, labour and land market participation, migration, agricultural and livestock production and participation in organizations. Community level data were also collected on the characteristics and organization of the ejido. The surveys were carried out by the Agrarian Reform Secretariat and the World Bank with assistance from the University of California, Berkeley.

II

Brief history of the ejido and the Salinas/Zedillo reforms

The land reform process in Mexico was the result of pressure from the peasantry who played a key role in the Mexican Revolution during the second decade of the twentieth century. Land and water resources were granted by the President of the Republic not individually but to communities or groups of producers, known as ejidos. Indigenous communities recognized as such were given a different status, and were termed agrarian communities. Each ejidatario, or comunero, was given usufruct rights over a parcel of land, access to common lands, the right to an urban plot and voting rights in the ejido assembly.[3]

[2] A detailed description of the Mexican data and their sampling properties can be found in Cord (1998a). The total 1997 dataset, panel and non-panel, numbered 1,665 households. A large proportion of these households were in Chiapas, a state from which no observations were drawn in 1994 owing to the armed insurrection early that year.

[3] See De Janvry, Gordillo and Sadoulet (1997) for a good description of the social and political background to the ejido.

As of 1996, over 29,000 legally constituted ejidos and agrarian communities were in existence (INDA, 1996), controlling more than half the nation's irrigated and rainfed land and over 70% of its forest cover. This land reform (or social) sector includes more than 3 million ejidatarios, accounting for over 75% of all agricultural producers in the country. More than 15 million people directly depend on ejido lands for part of their livelihood. In 1992, the land reform sector contributed over 70% of the country's output of maize and 80% of that of beans (De Janvry and others, 1995).

The question of whether ejido producers are more or less productive than farmers in the private sector is one that has been much debated.[4] While ejido peasants as a group have been the recipients of much State largesse and patronage, this has come at the cost of inflexibility in production and political control. Many State policies, furthermore, have benefited private and ejido producers alike; indeed, State investment in agriculture since the Cárdenas presidency (1934-1940) has tended to favour private and ejido commercial farming rather then the ejido sector as a whole (Thiesenhusen, 1996 and Heath, 1990).

Furthermore, it is unclear whether the community structure of the ejido has had a positive or negative effect on productivity. While often clearly playing a role in increasing access to credit, common natural resources, pooled labour resources and economies of scale for the purchase of agricultural machinery, the ejido has often been undermined by corruption and inefficiency, as local caciques and government agents use the legal structure to further their personal interests at the expense of the ejido. Both Dovring (1969) and Heath (1990) have shown that, controlling for farm size, few differences in productivity can be found between ejido and private producers.

During the presidency of Carlos Salinas de Gortari (1988-1994), Mexico embarked upon a programme of structural reforms that has worked and will continue to work profound transformations in its economy and society. The Government joined the General Agreement on Tariffs and Trade (GATT), signed the North American Free Trade Agreement (NAFTA) with Canada and the United States, initiated changes in the system of land ownership in the ejido (land reform) sector affecting over half the country's territory and modified the role of the State in credit, marketing and other agricultural support services.

Sectoral reforms centred on trade liberalization, the curtailment of State intervention in agriculture and cattle production and the reduction and redirection of subsidies, particularly as regards credit and technical assistance. This involved doing away with quantitative restrictions and licensing-in requirements, reducing tariffs, deregulating input and output markets and abolishing price guarantees, with the exception of maize and bean prices. As development bank credit came to be restricted to producers with productive potential and without debt arrears, a new national welfare institution arose, Pronasol, which in agriculture functioned as a provider of credit to poor rainfed producers and as a promoter of rural development initiatives. The impact of the reforms was aggravated by a macroeconomic policy that resulted in high interest rates and an overvalued exchange rate, as well as a slowdown in the overall rate of economic growth. The impact of this profitability crisis differed greatly between households, having the severest effects on those farmers who participated in output markets and/or used purchased inputs in agricultural and cattle production.[5]

The federal Government used two main programmes to support agricultural and livestock-producing households. In 1994 it initiated an income support programme, Procampo, with the goal of compensating basic grain and oilseed farmers for the negative impact expected to result from the abolition of price guarantees and market support under NAFTA. In 1996, the Government created the Alianza para el Campo (Countryside Alliance) programme. The goal of Alianza was to enhance agricultural and livestock productivity through small investment projects financed jointly by the Government and producers. While Procampo reached over 80% of all ejidatarios in 1997, only 12% of ejido households participated in Alianza.

The backbone of the agricultural sector reforms was the 1992 reform of Article 27 of the Constitution, which formally ended the process of land reform in Mexico. This reform established a legal process, called Procede, whereby land rights were delineated within the ejido and land titles provided, and whereby ejidos, if authorized by the assembly, could then privatize individual parcels and eventually sell or rent out their land. The explicit objective of the reforms was to foster a modernized and efficient agricultural sector. Those farmers who were unable to compete were expected to leave agriculture (Téllez Kuenzler, 1994).

[4] See Thiesenhusen (1996) for a concise summary of this debate.

[5] See De Janvry, Gordillo and Sadoulet (1997) and Davis (1997) for a description of the impact of the reforms during this period.

In addition to this law, which was highly controversial and which many feared would signal the end of the ejido in Mexico, the reform also established a body of regulations, covering land transactions both prior and subsequent to privatization, which served as "candados" or lock-ins by making it harder to sell ejido land. Although by 1994 little progress had been made in the cumbersome process of delineating land rights within the ejido under the Procede programme, the liberalizing climate surrounding controls over the ejido had led to an increase in informal transactions, as is evident from the data available for this study.

The start of the Zedillo administration (1994-2000) was greeted by a severe currency crisis, which led to a large devaluation (120% between December 1994 and March 1995), high levels of inflation and macroeconomic instability right through 1996. The severity of the crisis and the subsequent macroeconomic instability overshadowed the impact of NAFTA for most of the agricultural sector, and it was this, combined with the continuing implementation of Procede, that was the main determinant of change in ejido household economic strategies over the 1994-1997 period.

In response, the Government tightened monetary and fiscal policy and continued with the structural adjustment of the economy, including deregulation and privatization of the transport sector and implementation of Article 27 reform (Cord, 1998a and 1998b). By December 1997, 79% of all ejidos had at least made a start with the Procede programme, while 59% had received title. Very few ejidos had opted for *dominio pleno*, or full privatization of their plots.

III

How ejidatarios have responded

Macroeconomic instability since 1994 and implementation of Article 27 reform have brought forth a variety of responses from ejido households, these responses being conditioned by the level of household access to a variety of income-producing assets. A first response involves the accumulation of land and the expansion of maize production; a second, further diversification into off-farm activities, particularly migration to the United States; and a third, the accumulation of cattle in conjunction with both increased maize growing and migration. Of overriding importance to all ejido household adjustment strategies, however, whether explicitly or as future options, are diversification into non-agricultural or livestock activities, which has been very widespread, and the pervasive influence of the United States labour market. Almost 45% of all households have a family connection in the United States, whether in the form of a current migrant or children and siblings of the head of the household residing permanently there. That this connection is alive and vibrant is shown by the high incidence of remitters (43%) among family members living in the United States.

These broad responses can be broken down. Despite the negative incentive framework and the rising cost of inputs, a core of modernized producers has been joined by a new group, and together these have led an expansion of the maize growing area. For many producers, including a large proportion of indigenous households, expansion into maize and fodder has been accompanied by the accumulation of cattle. Similarly, a group of new United States migrants have invested their off-farm earnings in cattle accumulation. Another group has expanded fruit and vegetable production, based not on access to irrigation but rather on agro-ecological factors. Those households that have the land, livestock and human capital assets needed to adjust successfully have significantly higher incomes than households without such assets.

The largest subgroup of ejidatarios, however, consists mostly of subsistence peasant producers, often indigenous, with little access to assets, institutions or government support, who are more constrained in their ability to adjust. They continue to depend on subsistence production of maize and beans, and have diversified heavily into low-paying local wage labour. These households, with less land, livestock, migration and human capital assets, have significantly lower household incomes then the households referred to above that have been able to adjust successfully. Without access to adequate levels of assets, these households will continue to struggle in the current austere macroeconomic environment.

Lastly, the adjustment responses exhibited by indigenous households from different parts of the country refute the assumption, common in sectoral analysis and political debate, that indigenous households are homogeneous in terms of living standards and asset levels.

IV

Key components of ejidatarios' adjustment strategies

1. Land accumulation

Reform of Article 27 of the Mexican constitution has brought about significant changes in patterns of land ownership and control in the Mexican ejido. From 1994 to 1997, the amount of quality-adjusted land assets under individual control increased by over 25% from an average of 8 NRE (National Rainfed Equivalents)[6] hectares in 1994 to 10 NRE hectares in 1997. This increase in individual control over land assets is a factor behind many of the changes in household income generation strategies described in the rest of this paper. These include increases in cattle accumulation, crop area given over to maize and fodder and maize market participation as sellers, as table 1 shows.[7]

This change in land ownership patterns came about through unexpected channels. One of the results promised for Article 27 reform was that land markets would be formalized and become more efficient. The Procede certification process was intended to increase the frequency of land sales and rentals. However, analysis shows that while Procede did indeed have a significant impact in stimulating land markets, particularly for small, poor landholders (Olinto, Deininger and Davis, 2000), the largest increase in rentals owed more to the passage of the law then to the formal process of certification (Olinto, 1998).

More importantly, however, in terms of the change in total land area, ejidos, in anticipation of or as part of the Procede delineation process, or simply because of the atmosphere created by Article 27 reform, began to divide up common land resources among their ejidatarios, so that vast tracts of pasture and forest land came under individual control, both formally and informally. Part of the increase in land assets was also due to quality improvements, as our measure adjusts for quality: in many cases rainfed land became irrigated,[8] particularly in the North and Pacific North, while elsewhere forest was converted into pasture or rainfed agricultural land.[9]

Without more detailed study it is difficult to determine the exact importance of each of these different changes in the land situation. As can be seen in table 1, without adjusting for quality, the average amount of irrigated, rainfed and forest land per household increased significantly from 1994 to 1997. The relative insignificance of pasture land masks widespread shifts between the forest, pasture and rainfed categories. The Gulf region has been the scene of the greatest of these changes, which we suspect are primarily due to the division of the Commons.[10] One negative consequence has been the creation of a new class of large producers, *latifundistas* from a Mexican historical perspective, controlling over 100 NRE hectares of land apiece. The ten producers concerned (up from one in 1994 in the panel subset) account for over 25% of the total increase in new land under individual control.

Nonetheless, the new latifundia aside, these changes do not appear to have worsened the distribution of individually controlled land. Except for a few

[6] Land was aggregated, adjusting for quality, into National Rainfed Equivalents. Details of the construction of this land aggregate can be found in Davis, 1997.

[7] Means tests in all tables are the following: for 0,1 variables, the null hypothesis is rejected if c > 3.84 (2 tails, 10%*) or 5.02 (2 tails, 5%**); for continuous variables, the null hypotheses is rejected if t > 1.65 (2 tails, 10%) or 1.96 (2 tails, 5%).

[8] This increase is due not to a widespread programme to expand irrigation, but rather to the variable nature of much of Mexican irrigation.

[9] That this should be regarded as a quality improvement does not mean that it is better or preferable from a social point of view, simply that rainfed land is considered to have higher economic potential.

[10] This has been confirmed in further recent field work by Carlos Munoz of the University of California, Berkeley.

TABLE 1

Mexico (ejidos): Household characteristics by changes in land asset category, 1994 and 1997[ab]

	Units	Overall			Less land				More land				No change		
		1994	1997	*Tests*	1994	1997	*Tests*		1994	1997	*Tests*		1994	1997	*Tests*
Number of weighted observations		1 308	1 308		120	120			381	381			806	806	
Land assets															
Total	*NRE*[c]	*8.10*	*10.06*	++	*14.53*	*3.58*	--	--	*5.40*	*15.90*	++	++	*8.40*	*8.27*	--
Irrigated	has.	.95	1.35	++	1.80	.46	--	--	.51	2.29	++	++	1.03	1.04	--
Rainfed	has.	5.74	6.80	++	6.33	3.06	--	--	4.53	8.73	++	++	6.23	6.44	-
Pasture	has.	3.04	3.63		8.57	.49	--	--	1.75	7.27	++	++	2.83	2.38	--
Forest	has.	.31	.98	+	.40	.45			.32	2.14		++	.28	.51	-
Cattle															
Heads of cattle	no.	5.70	6.66	+	9.04	5.47			5.46	7.92	++	++	5.31	6.25	
Agricultural production															
Maize, irrigated	has.	.38	.76	++	.78	.43			.29	1.39	++	++	.37	.51	--
Maize, rainfed	has.	2.93	3.01		3.20	1.71	--	--	2.55	3.25	++		3.07	3.09	
Fodder, irrigated	has.	.09	.17		.02	.06			.21	.48	+	++	.05	.03	--
Fodder, rainfed	has.	.96	1.24		.62	.55			.71	1.68	++	++	1.13	1.14	
Other basic grains	has.	.27	.43	+	.61	.66			.11	.50	++		.30	.36	
Oilseeds	has.	.45	.35		1.08	.91		++	.10	.34	+		.52	.28	-
Agricultural technology															
HYV	%	18	23	++	18	20			14	28	++	++	20	22	
Chemicals	%	45	49	++	39	39		--	42	55	++	++	47	48	
Household income															
Total	*Pesos*	*25 495*			*18 219*			--	*28 995*			++	*24 931*		
Land markets															
Purchased	%	4			3				9			++	2		--

[a] ++ means significant at the 5% level; + means significant at the 10% level.

[b] The first test column tests differences in means between 1994 and 1997 values, while the second is the test of the 1997 value against the sum of all other categories. In some cases, land planted is greater than land assets, since rented land is not included in the calculation of land assets. Households are placed in the "more land" category if they accumulated 50% more land from 1994 to 1997. Households in the "same" category increased or decreased their land holdings by less than 50% from 1994 to 1997.

[c] In NRE (National Rainfed Equivalent) hectares.

households that have sold off their holdings, the accumulation of land has benefited landowners of all sizes. Table 2, a matrix of 1994 and 1997 land categories, clearly shows the movement of households to greater land sizes. While approximately 50% of all households remained in the same category, the majority of the remainder moved up in category, while a smaller number moved down. A comparison of Gini coefficients between the two years shows little change.

2. Risk-averse agriculture

a) *Cropping patterns*

The 1994 devaluation, coupled with deregulation in the agricultural sector, gave rise to expectations of improved international competitiveness and diversification into higher value crops. Instead, ejido producers showed little change in cropping patterns from 1994 to 1997, and trends seen during the 1990-1994 period were reaffirmed. Maize and beans, along with fodder crops, remained the staples of most producers, large and small, in most regions of the country. In fact the maize

TABLE 2

Mexico (ejidos): Matrix of land assets, 1994 and 1997

		1994						
		Land asset categories (hectares)						
		0	**e-2**	**2-5**	**5-10**	**10-18**	**>18**	**Total**
1997	0	0	10	4	6	4	1	25
	e-2	0	133	48	4	1	0	186
	2-5	0	81	232	43	12	4	372
	5-10	2	13	95	160	26	10	306
	10-18	2	6	33	74	119	21	255
	>18	1	3	13	23	58	65	163
	Total	*5*	*246*	*425*	*310*	*220*	*101*	*1307*

growing area was expanded, primarily by larger, irrigated farms, partially at the expense of higher value crops such as wheat and oilseeds, while the majority of peasant farmers continued to depend on maize.

While this tendency from 1990 to 1994 was ascribed to higher guaranteed prices for maize, from 1994 to 1997 real maize prices underwent significant decreases. The continued reliance on maize in 1997 is linked to the low price risk and production costs of this crop by comparison with higher value crops, considerations that were particularly important in a situation of economic uncertainty compounded by poor institutional support and weak marketing channels (see Cord, 1998a and Olsen, 1998). Many households also prefer the quality of home-grown native varieties to the imported or HYV maize used in most of the dough and tortillas available for purchase. Also, a mistaken belief among farmers that they had to continue to grow basic grains in order to receive Procampo benefits may have influenced the decision of many of them to stay in maize production.

Most producers continued to grow maize and beans between 1994 and 1997. Almost 75% of households planted monocropped maize, while 19% intercropped maize with other crops, primarily beans. The proportion of households growing fruit and vegetables and fodder, the next most important crop groups, remained essentially unchanged between 1994 and 1997.

The expansion of maize growing becomes evident when looked at from the perspective of the area under cultivation. This expansion occurred primarily on larger, irrigated farms planting in the autumn-winter season, the very farms that were expected to diversify into higher value crops. Table 3 shows the irrigated area under cultivation, in the aggregate and by farm size. The average area give over to monocropped maize per household more than doubled from 1994 to 1997, continuing the trend seen during the earlier period. Similarly, the area under fodder crops almost doubled. This growth came partly from an increase of almost 50% in the amount of irrigated land under cultivation, which reversed the 1990-1994 trend towards a decrease in the irrigated area. The remainder of the growth in maize and fodder production came at the expense of wheat and oilseeds (particularly soya beans): the area of the latter dropped to zero, completing the long-term decline in the production of those crops. Again, most of this change took place on larger farms.

In table 4, households are categorized according to changes in the area planted with maize over the survey period. Comparison of households that expanded maize production with those that reduced it or kept it unchanged shows that the former were larger, modernized producers. These tended to have more land assets and land in use than the other categories, and were the only category of households to increase cattle stocks significantly over the survey period. A significantly larger proportion of these households used HYV seeds in production, and they showed the largest increase in use of these from 1994 onwards. Their farms were spread out geographically across the country, and they had higher than average household incomes.

TABLE 3

Mexico (ejidos): Average irrigated area per crop by year and farm size (hectares), 1990, 1994 and 1997

	1990	1994	1997
Maize (monocropped)	0.25	0.39	0.79
< 5 has	0.16	0.10	0.13
≥ 5 has	0.46	0.79	1.41
Wheat	0.30	0.16	0.13
< 5 has	0.01	0.01	0.00
≥ 5 has	0.66	0.37	0.25
Oil seeds	0.16	0.07	0.00
< 5 has	0.00	0.00	0.00
≥ 5 has	0.37	0.16	0.00
Fodder	0.09	0.10	0.18
< 5 has	0.02	0.02	0.01
≥ 5 has	0.18	0.20	0.34

By contrast, households that reduced the area under maize showed significantly lower technology use in both 1994 and 1997, and did not accumulate cattle. Part of this decrease was transferred to other basic grains, while a significantly higher proportion of households rented out land. These households were located to a disproportionate extent in the North, and less in the Gulf region.

The largest group of maize producers maintained their level of production. These primarily rainfed-based peasant producers showed little change in agricultural production, with the exception of the area under fodder, but expanded their participation in off-farm wage labour and temporary migration to the United States. Generally speaking, these households had lower levels of education and production assets (land, cattle and machinery). Their limited ability to adjust through agriculture resulted in their having significantly lower incomes than other households.

While irrigated, modernized producers were primarily engaged in driving the expansion of maize

TABLE 4

Mexico (ejidos): Household characteristics by changes in maize area category, 1994 and 1997[ab]

	Units	Less maize			More maize			No maize			No change		
		1994	1997	*Tests*	1994	1997	*Tests*	1994	1997	*Tests*	1994	1997	*Tests*
Number of weighted observations		196	196		362	362		124	124		625	625	
Land assets													
Total	*NRE*[c]	*9.98*	*10.39*		*7.38*	*11.41*	++ ++	*12.54*	*14.66*	++	*7.04*	*8.27*	++ --
Irrigated	has.	1.24	1.37		.83	1.78	++ ++	2.45	3.55	++	.63	.67	--
Rainfed	has.	7.31	6.89		5.10	7.49	++ +	6.57	6.44		5.46	6.44	++
Cattle													
Heads of cattle	no.	6.63	6.47		4.84	7.00	++	10.18	9.38	++	5.01	5.99	+
Human capital													
Education, head of household	years		3.41			2.96			4.09	++		2.97	--
Average adult education	years		4.59			4.70			6.01	++		4.23	--
Migration													
Current migrant to United States	%	3	13	++ ++	3	6		3	10		2	8	++
Capital assets													
Tractor ownership	%		10			9			17	++		5	--
Truck ownership	%		10			14			19	++		9	--
Agricultural production													
Maize, irrigated	has.	.71	.07	-- --	.24	1.87	++ ++	.00	.00	--	.44	.48	--
Maize, rainfed	has.	4.64	.91	-- --	1.74	4.53	++ ++	.00	.00	--	3.66	3.38	++
Fruit and vegetables, irrigated	has.	.21	.10		.13	.09		.29	.42	++	.04	.06	--
Fruit and vegetables, rainfed	has.	.24	.44		.40	.52		.73	.74	+	.33	.37	
Other basic grains	has.	.45	1.00	++	.22	.18	-	.78	1.70	++	.14	.14	
Oilseeds	has.	.86	1.01	++	.47	.06	-- --	1.67	1.63	++	.07	.07	--
Agricultural technology													
HYV	%	22	22		17	28	++ ++	25	29		16	20	--
Household income													
Total	*Pesos*		*22 131*			*30 047*	++		*37 949*	++		*21 401*	--
Land markets													
Rented more out	%		10	+		3	--		19	++		5	--
Rented more in	%		3	--		13	++		14			8	

[a] ++ means significant at the 5% level; + means significant at the 10% level.

[b] The first test column tests differences in means between 1994 and 1997 values, while the second is the test of the 1997 value against the sum of all other categories. Categorization is based on a 50% change in the maize area planted.

[c] In NRE (National Rainfed Equivalent) hectares.

growing, some of them formed part of a small but important core of non-maize producers. Located primarily in the Pacific North, these farmers have given over significantly more land to non-maize crops than other producers, although this area did not expand over the survey period. In addition to having higher than average land and cattle holdings to begin with, however, these farmers had access to significantly larger amounts of United States migration assets, owned more capital assets and had higher levels of education, all of which translated into higher then average household income. In other words, these households were better off to begin with. This was achieved with lower levels of government support during the survey period, as compared to maize producers, in the form of Procampo and formal credit.

b) *Technology use*

From 1994 to 1997 the proportion of households using technological inputs in agriculture rose overall, in some cases back up to 1990 levels, although the pattern varied by crop and planting season. This rise was due in part to the impact of two government programmes. The increase in the use of high yield variety (HYV) seeds can be partly attributed to the "kilo for kilo" component of Alianza para el Campo and to Procampo transfers, in the case of basic grain producers.[11]

[11] Sadoulet, De Janvry and Davis (1999) show that Procampo had a significant and positive effect on the likelihood of agricultural technology being adopted over this period.

TABLE 5

Mexico (ejidos): Agricultural input use of farming households, by year and farm size (NRE hectares), 1990, 1994 and 1997

	1990			1994				1997			
	All	e<5	>5	All	Test 1990-1994	e<5	>5	All	Test 1994-1997	e<5	>5
Number of weighted observations	1 531	861	671	1 273		720	553	1 273		601	635
% of households using agricultural inputs											
HYV	24	15	37	19	—	11	29	25	++	12	37
Fertilizer	63	63	63	54	—	56	50	60	++	60	60
Natural	10	10	10	4	—	4	3	13	++	13	13
Chemical	56	56	56	51	—	53	49	53		54	52
Chemicals	56	46	69	47	—	36	62	52	++	38	66
Technical assistance	61	54	71	9	—	5	14	7	-	3	11
% using each input source											
Self-supply	20	18	23	10	—	10	9	12		10	13
Official	64	58	71	10	—	5	15	13	+	13	12
Commercial	58	53	65	61		55	69	69	++	63	76
Social	12	11	13	16	++	13	19	6	—	3	8
% using each payment method											
Cash	-			-				74		68	79
Credit	-			-				12		10	14
In kind	-			-				1		1	1
No payment	-			-				15		21	8
Other	-			-				1		0	0

The rise in the proportion of farming households using HYV seeds, fertilizer and chemicals reversed the downward trend seen from 1990 to 1994. If farms are categorized by size, as in table 5, it transpires that large farms made more extensive use of both HYV seeds and chemicals, as they had in previous years, and were behind the increased use of inputs. Inputs were increasingly purchased from commercial sources, while the role of social organizations (both ejido and producer organizations) decreased significantly. Access to technical assistance continued to be extremely low for producers of all classes.

Table 6 shows who entered and left high yield production,[12] which allows a clearer picture to emerge. Analysis of those households that changed their agricultural input use shows that the changing incentive structure led some producers to leave modernized, high yield agriculture for increasing diversification into off-farm activities, principally United States migration. These producers, most of whom were located in the North, retained their land assets but rented out more land and reduced the area given over to maize, thus reorienting maize production towards self-sufficiency.

Meanwhile, a different group of producers, located disproportionately in the Gulf, became new users of HYV seeds and chemicals. Unlike the previous group, these producers were investing in and modernizing agricultural production. They exhibited high rates of land and cattle accumulation and used their land to produce increasing amounts of maize, fodder and basic grains. This trend was accompanied by a significant increase in access to technical assistance.

The new modernizers joined a core group of technologically advanced producers who used inputs in both periods. These producers, located disproportionately in the Pacific North and Gulf regions,

[12] Defined as use of HYV seeds and/or chemicals.

TABLE 6

Mexico (ejidos): Household characteristics by changes in input use category, 1994 and 1997[ab]

	Units	New input use				Old input use				Input use discontinued				No input use			
		1994	1997	*Tests* A	B	1994	1997	*Tests* A	B	1994	1997	*Tests* A	B	1994	1997	*Tests* A	B
Number of weighted observations		251	251			499	499			143	143			407	407		
Land assets																	
Irrigated	has.	.83	1.49	++		1.29	1.77	+	++	1.52	1.51			.41	.70	++	--
Rainfed	has.	5.04	7.04	+		6.45	7.96	++	++	7.04	6.41			4.87	5.39		--
Cattle																	
Heads of cattle																	
Human capital	no.	4.01	6.6	++		8.13	9.07		++	6.97	6.83			3.35	3.73		--
Average adult education	years		4.56				4.85		++		4.62				4.27		--
Migration																	
Current migrant to United States	%	1	8	++		3	5		--	4	18	++	++	2	9	++	
Institutions and organizations																	
Formal credit	%	24	22			29	26		++	32	10	--	--	26	10	--	--
Total credit	%	26	37	++	++	32	42	++	++	34	18	--	--	28	18	--	--
Technical assistance	%	1	6	++		16	11	-	++	10	1	--	--	2	1		--
Agricultural production																	
Maize, irrigated	has.	.47	1.01	++		.48	1.24	++	++	.62	.37			.13	.16		--
Maize, rainfed	has.	3.12	3.43		+	3.45	3.88		++	3.13	2.18	-	--	2.12	1.99		--
Fodder, irrigated	has.	.05	.50	++	++	.20	.16			.06	.01			.01	.03		--
Fodder, rainfed	has.	.63	1.84	++	++	1.34	1.57		+	1.82	1.48			.41	.40		--
Other basic grains	has.	.12	.59	++		.32	.53			.75	.59			.13	.15		--
Government programmes																	
Alianza para el Campo	%		14				18		++		5		--		7		--
Procampo	%		89		++		88		++		81				76		--
Household income																	
Total	Pesos		27 193				30 499		++		26 116				18 373		--
Regions																	
North	%		21				9		--		33		++		31		++
Pacific North	%		5		-		13		++		14				6		--
Centre	%		35				28		--		35				41		++
Gulf	%		28		++		34		++		5		--		5		--
South	%		11				16				14				18		+
Land markets																	
Rented more out	%		5				6				11		++		7		
Rented more in	%		12				13		++		8				5		--

[a] ++ means significant at the 5% level; + means significant at the 10% level.

[b] Test column A tests differences in means between 1994 and 1997 values, while column B is the test of the 1997 value against the sum of all other categories.

also accumulated more cattle and land, rented more land from others and increased production of all crops, with the exception of other basic grains. These "old modernizers" had significantly greater access to technical assistance, credit, Alianza and Procampo, and higher levels of education. They also had higher household incomes than the other categories.

Those households that did not use inputs in either period tended to be smaller, poorer landholders, a subset of the stagnant maize producers category described in the previous section. These peasant producers accumulated land during the panel period, but had significantly less land of all types than other farmers. They participated less in maize and land markets, had fewer migration, human capital and livestock assets,

and were heavily dependent on off-farm activities, primarily local agricultural wage labour, to supplement their meagre agricultural and cattle income. Overall, these households had significantly lower total household incomes. They were located primarily in the North and Centre regions, and to a lesser extent in the Gulf, and had less access to Alianza and Procampo.

c) *Scarcity of credit*

Providing access to adequate financial resources has to be a key component of any sectoral programme that has the goal of increasing agricultural competitiveness. Unfortunately, credit remains scarce for producers in the ejido sector. At first glance, it seems that access to credit declined precipitously between 1994 and 1997. While 30% of households had some kind of formal or informal credit in 1994, by 1996 and 1997 this proportion had dropped to 20% in each year. Most of this decline was due to the ending of the Pronasol programme, which was only partially made up for by an increase in the use of informal sources. Access to Banrural credit remained more or less constant at around 5%, while other types of formal public-sector or commercial credit were negligible. If access to credit is taken for 1996 and 1997 together, however, over 10% of panel households had Banrural credit. Going back to table 5, only 12% of households received agricultural inputs on credit.

The drop caused by the ending of Pronasol is somewhat deceptive, however. Although its conceptual origins were different, Pronasol was similar in practice to the Procampo programme. While Pronasol was conceived as a way of providing interest-free loans to smaller producers for agricultural inputs, Procampo is meant to compensate basic grain producers for the trade liberalization provisions of NAFTA. The goal is to provide this income transfer in time for it to be used in the purchase of agricultural inputs, whence the similarity to Pronasol. Procampo has much wider coverage than Pronasol ever did, reaching more than 80% of all ejido households. In this respect, then, there has been a tremendous increase in credit. The amounts provided are too small, however, to entice producers to take the risk of diversifying beyond maize and other basic grains.

Nonetheless, econometric studies using ejido data have shown that to some extent Procampo payments do in fact ease the credit and/or liquidity constraints that pervade the ejido sector. Sadoulet, De Janvry and Davis (1999) find that Procampo transfers have a multiplier effect on total agricultural and livestock income. For every peso given in transfers, 2 pesos' worth of household income is generated. These results are indicative both of the hunger for financing that exists and of the actual and potential returns that can be generated by easing credit and liquidity constraints in the ejido sector.

Households that did receive formal credit in 1997, as shown in table 7, display special characteristics. Those households that received formal credit for the first time in 1997, or had credit in both periods, had agriculture as their primary economic activity and were dynamic producers using high yield technologies and increasing the amount of land they rented from others. Both groups received over half their 1997 credit from Banrural and had a significantly higher incidence of participation in Alianza and Procampo. Both had significantly higher incomes then those households that did not receive credit in 1996 or 1997.

Important differences separate these groups, however. The new credit recipients had significantly greater areas under maize, and 17% of these households went into fruit and vegetable production. This increase in agricultural production was helped by a large rise in land holdings, and was accompanied by an increase in input use. Over 50% sold their maize at market. Moreover, these households had significantly lower participation in waged activities owing to their success in agriculture and cattle production. A significantly higher percentage of them were from the Gulf region,[13] and a lower percentage from the South and North.

Existing credit recipients, on the other hand, expanded maize production partly at the expense of other basic grains and oilseeds. These households maintained their off-farm activities and expanded into United States migration; they already had high levels of input use in 1994, and this continued to be the case in 1997. This group includes the traditionally modernizing producers of the North Pacific, as well as other regions.

Those households that received formal credit in 1994 but no longer did so in 1996 or 1997 were mainly Pronasol recipients who received no credit, even of an informal kind, in 1997. A significantly higher proportion of these well educated households left maize and fodder production while expanding into off-farm activities, particularly United States migration. There is

[13] The data show that the Gulf region was particularly favoured with access to government programmes (Alianza, Procampo, credit and technical assistance) during this period (see Cord, 1998b). Two reasons may account for this. Yucatan and Tabasco states both had nationally important elections for governors, and the governor of Yucatan is a former Secretary of Agrarian Reform.

TABLE 7

Mexico (ejidos): Household characteristics by changes in credit use category, 1994 and 1997[ab]

	Units	Credit use discontinued				New credit use				Previous credit use				No credit use			
		1994	1997	*Tests*		1994	1997	*Tests*		1994	1997	*Tests*		1994	1997	*Tests*	
				A	*B*			*A*	*B*			*A*	*B*			*A*	*B*
Number of weighted observations		262	262			145	145			97	97			802	802		
Land assets																	
Total	*has.*	*10.28*	*12.00*		++	*7.73*	*10.94*	++		*9.29*	*11.05*			*7.30*	*9.15*	++	--
Irrigated	has.																
Rainfed	has.	7.34	8.07		++	5.63	7.01			5.68	5.88			5.25	6.45	++	-
Human capital																	
Average adult education	years		5.06		++		4.58				4.87				4.40		--
Off-farm activities																	
Off farm	%	47	67	++	++	44	54			56	62			41	60	++	
Wage labour	%	38	49	++		42	34		--	53	50			35	47	++	
Migration																	
Current migrant to United States	%	2	11	++	+	2	2		--	0	7	++		3	8	++	
Current migrant within Mexico	%	9	6			14	4	--		10	7			10	8		
Agricultural production																	
Maize, irrigated	has.	.41	.38			.36	1.34		+	.71	1.78	++	++	.34	.65	++	
Maize, rainfed	has.	2.99	2.55		--	3.73	4.58		++	3.73	3.32			2.67	2.83		--
Fruit and vegetables, rainfed	has.																
Other basic grains	has.	.32	1.03	++	++	.08	.11			.26	.15			.29	.33		
Move into fruit and vegetables	%		8				17		++		8				7		--
Agricultural technology																	
HYV	%	22	26			22	23			33	43		++	14	20	++	--
Chemicals	%	42	43		--	56	75	++	++	64	65		++	41	45		--
Government programmes																	
Alianza para el Campo	%		10				30		++		20		++		9		--
Procampo	%		86				96		++		93		++		79		--
Household income																	
Total	*Pesos*		*29 447*		++		*32 660*		++		*31 734*		++		*22 236*		--
Regions																	
North	%		32		++		8		--		16				20		
Pacific North	%		17		++		8				26		++		5		--
Centre	%		33				17		--		29				38		++
Gulf	%		7		--		59		++		28				17		--
South	%		12				7		--		2		--		20		++
Land markets																	
Rented more in	%		9				12				18		++		8		-

[a] ++ means significant at the 5% level; + means significant at the 10% level.

[b] Test column A tests differences in means between 1994 and 1997 values, while column B is the test of the 1997 value against the sum of all other categories.

likely to be a considerable overlap between this group and those that left high yield agriculture. These households were located disproportionately in the North and Pacific North, but were no poorer than other households in terms of either assets (total land and cattle) or income.

The great majority of ejido households did not receive formal credit in either 1994 or 1997. Such households were poorer in terms of income and asset holdings (land and education) then those households that received credit in either of the panel years. They had smaller plots and were less likely to have received sup-

port from government agricultural sector programmes. They were located primarily in the Centre and Southern regions.

3. Livestock accumulation

Livestock production in the ejido sector has three important functions. Firstly, it accounts for over 16% of all income in that sector. Secondly, livestock and livestock derivatives (such as milk and eggs) consumed at home are an integral part of household diets. Thirdly, and perhaps most importantly given the macroeconomic instability and high interest rates that prevailed during this period, animal holdings serve as saving and insurance mechanisms for many producers. In most cases they function as part of a complementary strategy, which may be one of land accumulation and increased maize growing or United States migration.

Accordingly, livestock production is an increasingly important component of income generation strategies among ejido households. The average number of heads of cattle owned increased significantly from 1994 to 1997, growing by almost 20%, although this increase was less than that of the 1990-1994 period. Besides cattle, other kinds of livestock are widely kept. Over half the 1997 households owned poultry and almost 40% pigs. Milk was produced by 25% of households and eggs by 38%.

As was seen in the section on agriculture, cattle accumulation is associated with expansion of the area given over to maize and fodder, as well as fruit and vegetables. To achieve this growth, cattle-accumulating households increased all types of land assets except forest, as table 8 shows. These households had above average input use and Alianza participation rates. Over half the accumulators were new cattle owners.

A key accumulator subgroup was constituted by those households, primarily in the North, whose members migrated to the United States for the first time during the survey period. These cattle-accumulating households had higher than average migration assets in the United States. Conversely, those who decreased their holdings of livestock, or had none, received significantly less in remittances than cattle owners. Those with access to networks in the United States are in a better position to accumulate cattle because they receive remittances and are able to generate temporary migration income. Migration may serve to relax credit constraints that inhibit cattle accumulation.[14] Cattle accumulation may also complement United States migration in that it is relatively non-labour intensive and serves as an investment/saving mechanism for migration income. Overall, accumulating households had significantly higher income than those that decreased their holdings of livestock or had no such holdings.

Those livestock households that maintained the size of their herds, however, did not expand either maize or fodder production or accumulate land, although their 1997 holdings of cattle and land, and the area they had under fodder, were significantly greater than those of the other categories. These households also had significantly higher levels of migration, something that seems to confirm the cattle-migration link discussed earlier. On the other hand, while they increased their off-farm activities during the survey period, in 1997 they still engaged less in these than the other categories. Unsurprisingly, given their large internal demand, these households participated less as sellers in the maize market.

Those that reduced their cattle holdings, on the other hand, also reduced their holdings of pasture land and increasingly rented land out. Although off-farm activities increased somewhat (1997 levels were still significantly lower than among other households), as did United States migration, no strong alternative to the maize-cattle strategy emerged among these households. Thus, it appears that reducing livestock holdings serves the same function as running down savings during difficult economic times.

4. Diversification into off-farm activities

It is no longer accurate to think of the ejido sector as primarily agricultural. In terms of both activities and income, ejido households have diversified into the off-farm sector. Off-farm activities serve a variety of purposes, most importantly as sources of income or household consumption. We have found evidence that in some cases these activities may also complement agricultural production by easing the liquidity and credit constraints that afflict the sector.

It is thus not surprising that ejido adjustment is taking place primarily outside agriculture. Households are reacting to price risk, instability in agriculture and declining profitability by further diversifying into income-generating activities outside agriculture. From 1994 to 1997, the proportion of households participating in off-farm activities increased by 33% to stand at 60% of all ejido households. This statistically significant increase was

[14] This is the conclusion drawn by Sadoulet, De Janvry and Davis (1999).

TABLE 8

Mexico (ejidos): Household characteristics by changes in cattle ownership category, 1994 and 1997[ab]

	Units	Less cattle				More cattle				No change			
		1994	1997	*Tests*		1994	1997	*Tests*		1994	1997	*Tests*	
				A	B			A	B			A	B
Number of weighted observations		154	154			307	307			254	254		
Land assets													
Irrigated	has.	.59	1.27	+		.58	1.03	++		1.32	1.20		
Rainfed	has.	6.29	6.40			6.42	9.02	++	++	7.47	8.76		++
Pasture	has.												
Cattle													
Heads of cattle	no.	9.69	1.42	--	--	4.18	13.68	++	++	18.34	16.84		++
Proportion with cattle	%	100					100			100	100		
Migration assets													
Permanent United States (children)	no.		.69				.75		++		.80		++
Permanent United States (siblings)	no.		.77				.84				1.27		++
Agricultural production													
Maize, irrigated	has.	.17	.41	++		.26	1.02	++		.60	.53		
Maize, rainfed	has.	3.44	2.88			3.47	3.98		++	3.24	3.30		
Fodder, irrigated	has.	.00	.18			.04	.44	++		.32	.21		
Fodder, rainfed	has.	1.15	.90			1.32	2.28	+	+	2.14	2.46		++
Agricultural technology													
HYV	%	17	18			15	27	++		25	31		++
Government programmes													
Alianza para el Campo	%		10				20		++		12		
Procampo	%		77		-		87		+		90		++

[a] ++ means significant at the 5% level; + means significant at the 10% level.

[b] Test column A tests differences in means between 1994 and 1997 values, while column B is the test of the 1997 value against the sum of all other categories. Categorization is based on a 50% change in the number of heads of cattle.

seen across all land size categories and encompassed both waged and own-account activities, with the exception of agricultural wage labour. By 1997, 46% of all households were involved in wage labour and 24% in own-account activities. Off-farm wage activities were evenly divided between agricultural and non-agricultural wage labour.[15]

As table 9 shows, two distinct categories of household emerge: those that diversified into wage activities in 1997 or did such work in both periods, and "old" wage households. Both were driven to participate in the labour market by significant declines in land and cattle assets, although the "new" wage households substantially increased the number of heads of cattle under their control. Furthermore, both increased their input use over the survey period. However, the new wage households, located principally in the Gulf and of indigenous origin, expanded primarily into agricultural wage labour and increased their migration to other parts of Mexico and the United States, while the old wage households were located disproportionately in the Centre and North and engaged primarily in non-agricultural wage labour. These too increased migration to the United States.

5. Migration in the ejido

Proximity to the United States is a distinctive feature of the Mexican economy, influencing as it does not only trade, but also the export of labour. By 1997, almost 45% of ejido households had either a family member who had migrated to the United States or children and siblings living there, as shown in table 10. Over 50% of households with more then 5 NRE hectares had had a migratory connection with the United States. Migration to the United States, and to other parts of Mexico, thus dominates household decision-making in the ejido sector. Migration can serve not only as a source of income for consumption, but also as a risk-spreading di-

[15] We do not go into greater detail because most responses for waged and own-account activities were "Other", signifying that the survey's categorization was imprecise.

TABLE 9

Mexico (ejidos): Household characteristics by changes in wage labour category, 1994 and 1997[ab]

	Units	New wage earners				Old wage earners			
		1994	1997	*Tests* A	B	1994	1997	*Tests* A	B
Number of weighted observations		327	327			278	278		
Land assets									
Total	*has.*	*6.25*	*8.86*	++	-	*6.38*	*8.17*	++	--
Cattle									
Heads of cattle	no.	3.57	5.54	++	-	2.95	3.49		--
Human capital									
Average adult education	years		4.69				5.03		++
Family size	no.		6.39		++		6.54		++
Off-farm wage activities									
Off farm	%	9	100	++	++	100	100		++
Wage labour	%	0	100	++	++	100	100		++
Agricultural wage labour	%	0	44	++	++	38	31		++
Migration									
Current migrant to United States	%	2	12	++	++	5	12	++	++
Current migrant within Mexico	%	7	11		++	19	11	--	++
Agricultural technology									
HYV	%	12	19	++		16	24	++	
Regions									
North	%		22				27		++
Pacific North	%		3		--		11		
Centre	%		35				39		
Gulf	%		28		++		14		--
Ethnicity									
Indigenous	%		22		++		13		

[a] ++ means significant at the 5% level; + means significant at the 10% level.

[b] Test column A tests differences in means between 1994 and 1997 values, while column B is the test of the 1997 value against the sum of all other categories.

versification of a household's income generation portfolio. In addition, as we mentioned earlier, it can ease credit and liquidity constraints in agricultural and cattle production. Networks, or migration assets as they are called here, reduce the cost and risk of migration by operating as information gathering mechanisms.[16]

These assets prepared the way for a significant increase in temporary migration to the United States over the 1994-1997 period, as devaluation combined with uncertainty in the agricultural sector to make United States migration more appealing. Whereas in 1994 only 3% of panel households had current migrants in the United States, by 1997 this proportion had reached 8%, almost all of whom were new migrants. Current migration to the United States has a positive correlation with 1997 farm size, as do migration assets, and new United States migration is strongly correlated with region of origin. The highest rate of new migration is found, not surprisingly, in the North and Centre, while the rates in the Gulf and South, although low, make United States migration a feature of households in the panel sample for the first time.

Typically, it is not the rural asset-poor or destitute who are likely to migrate to the United States, but rather those who have the assets required to cover the significant fixed costs of such migration. Migration assets are also an important factor in facilitating migration, as these networks play a role in providing information (or reducing transaction costs). United States migration assets are also a source of cash income in the form of remittances and of information on advanced agricultural techniques learned by working on farms in the United States. Remittances are often spent on household consumption, particularly home improvements and construction, or invested in businesses.

[16] See Winters, De Janvry and Sadoulet (1999) for an analysis of the impact of community migration networks on the determinants of migration.

TABLE 10

Mexico (ejidos): Migration by farm size, 1997[a]
(Percentage of households with each type of migration)

	Farm size (NRE hectares)			
	All	<5	>5	*Tests*
Number of weighted observations	1 665	782	792	
1997 migration, temporary				
United States	8	5	10	**
Mexico	7	8	5	
Either	14	12	15	
Pre-1997 migration, temporary				
United States	10	8	11	
Mexico	17	21	14	*
Permanent migration (children)				
Living in United States	21	17	24	**
Living in Mexico but migrating temporarily to United States	7	5	9	**
Living in Mexico, outside home state	27	28	25	
Living in Mexico, in home state	52	49	56	**
Permanent migration (siblings)				
Living in United States	22	15	27	**
Living in Mexico but migrating temporarily to United States	13	8	17	**
Living in Mexico, outside home town	81	75	89	**
Living in Mexico, in home town	83	84	83	
Any migration or relative in United States	44	35	52	**

[a] ** indicates that means are significantly different at 5%; * indicates that means are significantly different at 10%; no mark indicates means are not significantly different at 10%.

Households with United States migration assets have significantly larger quantities of all types of assets, with the exception of education (not shown). These households had significantly more land assets in 1994 and 1997, although accumulation rates among households with and without migration assets were almost identical. On the other hand, households with United States migration assets had significantly more heads of cattle in both years and a higher rate of accumulation as well. A significantly larger proportion of these households owned tractors and trucks. This higher level of assets translated into significantly higher incomes. A disproportionately large number of these households lived in the North and Centre regions.

TABLE 11

Mexico (ejidos): Household income, 1994 and 1997
(1994 pesos and percentages)

	1994	1997	Change (%)
Number of weighted observations	1 031	1 031	
Total household income (pesos)	10 155	11 925	
On farm (% of total income)	51	44	-13
Net agriculture	36	28	-22
Net livestock	15	16	7
Off farm (% of total income)	38	43	11
Wages	30	25	-18
Own-account earnings	6	10	76
Remittances	2	8	215
Other (% of total income)	10	13	25
Procampo payments	0	8	...

6. Income

The structure of income, as shown in table 11, confirms the diversified nature of household economic activities discussed throughout this paper.[17] The importance of non-agricultural working activities is manifest: the 1997 figures in this survey of agricultural households show that most income was not from agricultural or livestock production. Over 44% of total household income derived from off-farm working activities, while almost 13% came from other sources, primarily Procampo payments. Wage labour, constituting 25% of total income, was the most important off-farm income

[17] A more detailed analysis of the structure and determinants of income using 1994-1997 data can be found in Davis, De Janvry, Diehl and Sadoulet (2000) and Sadoulet, De Janvry and Davis (1999).

source, followed by own-account activities and remittances.

The income data also confirm the change in the relative returns of different activities brought about by the crisis. Agriculture suffered, as discussed throughout this paper, with the share of total income contributed by this activity falling by 22%. This was offset to some degree by rising livestock income so that overall income from on-farm activities fell by 13%. Conversely, the share of off-farm income increased by 11%. This increase came from two sources: while the share contributed by wages dropped by 18%, both own-account and remittance income accounted for a larger share of total income. Other sources also increased by 25%, the bulk of this coming from Procampo transfers.

As table 12 shows, in 1997 these income shares varied by farm size. The share of agricultural income increased with holding size, to stand at 60% (including livestock) for the biggest landholders, while the reverse was true for off-farm activities, which accounted for 60% of the smallest landholders' income, or almost 75% if other income is included. Procampo payments, which depend on the area given over to basic grains, were constant across categories.

TABLE 12

Mexico (ejidos): Household income by farm size, 1997
(1994 pesos and percentages)

	Farm size (NRE hectares)						
	Total	0	e-2	2-5	5-10	10-18	>18
Number of weighted observations	1 031	24	188	365	302	253	159
Total household income (pesos)	11 925	7 144	5 592	7 558	14 452	13 845	21 648
On farm (% of total income)	44	23	26	27	45	48	60
Net agriculture	28	5	18	14	33	29	35
Net livestock	16	18	8	12	12	20	25
Off farm (% of total income)	43	46	60	58	44	39	27
Wages	25	40	31	36	31	19	11
Own-account earnings	10	3	27	17	4	11	8
Remittances	8	3	2	5	9	9	7
Other (% of total income)	13	31	14	16	11	13	13
Procampo payments	8	0	8	9	7	9	7

V

Conclusion

The predominance of risk-averse agricultural strategies among ejido households means that Mexico is losing its chance to capitalize on the opportunity provided by reform of Article 27, which entailed a radical restructuring of agrarian relationships in the Mexican countryside. Ejidatarios and their local assemblies were given the freedom to work, rent or sell their land. Unfortunately, the conditions are not in place for producers to use their newly acquired land assets productively. While the withdrawal of inefficient producers from agriculture was an explicit component of the reforms, poor incentives and an institutional vacuum threaten the existence of many potentially viable producers. Lacking profitability, these producers are forced to enter the labour market or migrate to urban centres and the United States. Sadoulet, De Janvry and Davis have shown that Procampo reduces off-farm diversification, suggesting that credit and liquidity constraints have led to there being more off-farm activity than there would be if adequate resources were available. Wholesale diversification of this sort clearly does not constitute a permanent solution for Mexican rural development.

Agriculture as a viable economic activity for family farmers, though, is not dead. Despite the negative incentive structure and patchy government support, those households that have adequate levels of agricultural assets, and thus the scope to achieve at least partial adjustment through agriculture, are clearly better off

then those that do not have this room for manoeuvre in agriculture. Again, studies using this data have shown that ejido producers can respond if credit and liquidity constraints are eased. Thus, potentially large rewards could be reaped if government were to take action to revitalize agrarian institutions and services that can reduce the risk and enhance the productivity of on-farm activities.

On the other hand, the complexity and diversity of the ejido sector suggest that the correct policy response is one that encompasses not just agricultural development, but rural development more generally. Ejidatarios are no longer primarily farmers, but instead rely on an array of activities to ensure their survival. Thus, meeting the challenge of reducing rural poverty, stemming the flow of migrants to urban areas and increasing the welfare of rural inhabitants will entail not just reducing risk and raising productivity in agriculture, but also providing the framework for an integrated rural development strategy. This would include measures to increase human capital (greater access to education and health services), infrastructure improvements to attract investment and provide better communications and, above all, jobs.

Structural adjustment and stabilization policies created a new context for rural development in the 1990s virtually throughout Latin America and the rest of the developing world. In Mexico, the rural development challenge involves:

i) Factor and product markets that have become less controlled and more global, but in many cases remain incomplete and opaque.

ii) The State which, with its reduced presence, is searching for a relevant role in the countryside. The dismantling of Conasupo, the increasing irrelevance of the Agrarian Reform Secretariat and the disappearance of the ejido from President Zedillo's agenda do not augur well. While the Agricultural Secretariat has taken on the mantle of rural development and embarked on a series of projects for marginal areas that are couched in terms of democracy and producer participation, the impact and nature of these programmes are as yet unclear.

iii) Civil society, which has taken on renewed importance. It remains to be seen, however, how a very heterogeneous assortment of producer organizations, community organizations (including the ejido), NGOs and individual actors will build on this new context.

A renascence of Mexican agrarian studies –which have a vibrant history, but have withered under the assault of the neoliberal revolution– is required, with a new focus on rural development, to document, describe and motivate the new dynamic of rural development. The subject-matter would have to include not just traditional agrarian issues but also other initiatives in the rural sector, such as the Progresa anti-poverty programme, which influence the economic strategies of rural households.

Bibliography

Cord, L. (1998a): Introduction, background paper prepared for the World Bank, Latin America and the Caribbean Region, Washington, D.C., World Bank, July.

_____ (1998b): Government programs, background paper prepared for the World Bank, Latin America and the Caribbean Region, Washington, D.C., World Bank, July.

Davis, B. (1997): Economic reform and the determinants of income among agricultural households in Mexico and Nicaragua, Berkeley, California, University of California, *Ph.D. dissertation.*

Davis, B., A. De Janvry, T. Diehl and E. Sadoulet (2000): An analysis of poverty in the Ejido sector, in A. Loyns, R. Knutson, K. Meilke and A. Yunez-Naude (eds.), *Policy Harmonization and Adjustment in the North American Agricultural and Food Industry*, Mexico City, University of Guelph/Colegio de México.

Deininger, K. and A. Heinegg (1995): Rural poverty in Mexico,Washington, D.C., World Bank, *mimeo*.

De Janvry, A., G. Gordillo and E. Sadoulet (1997): *Mexico's Second Agrarian Reform: Household and Community Responses, 1990-1994*, San Diego, California, Center for U.S.-Mexican Studies.

De Janvry, A. and others (1995): *Reformas del sector agrícola y el campesinado en México*, San José, International Fund for Agricultural Development (IFAD).

Dovring, F. (1969): *Land Reform and Productivity: The Mexican Case, Analysis of Census Data*, LTC paper, No. 63, Madison, Wisconsin, University of Wisconsin.

Heath, J. (1990): *Enhancing the Contribution of Land Reform to Mexican Agricultural Development*, Policy research and external affairs working papers, No. 285, Washington, D.C., World Bank.

INDA (Instituto Nacional de Desarrollo Agrario) (1996): *Principales resultados de la cédula de información básica a nivel nacional*, Mexico City.

Key, N., C. Muñoz-Pina, A. De Janvry and E. Sadoulet (1998): Social and environmental consequences of the Mexican reforms: Common pool resources in the Ejido sector, Berkeley, California, University of California, *mimeo*.

Lanjouw, P. (1998): Poverty and the non-farm economy in Mexico's Ejidos: 1994-1997, background paper prepared for the World Bank, Latin America and the Caribbean Region, Washington, D.C., World Bank, July.

Olinto, P., K. Deininger and B. Davis (2000): *Land Market Liberalization and the Access to Land by the Rural Poor: Panel Data Evidence of the Impact of the Mexican Ejido Reform*, Washington, D.C., World Bank/International Food Policy Research Institute (IFPRI), April.

Olinto, P. (1998): The impact of the Ejido reforms on land markets in Mexico, background paper prepared for the World Bank, Latin America and the Caribbean Region, Washington, D.C., World Bank, July.

Olsen, N. (1998): Incentive framework for agriculture, background paper prepared for the World Bank, Latin America and the Caribbean Region, Washington, D.C., World Bank, July.

Sadoulet, E., A. De Janvry and B. Davis (1999): *Cash Transfer Programs with Income Multipliers: PROCAMPO in Mexico*, Washington, D.C., World Bank/IFPRI, August.

Téllez Kuenzler, L. (1994): *La modernización del sector agropecuario y forestal,* Mexico City, Fondo de Cultura Económica (FCE).

Thiesenhusen, W. (1996): Mexican land reform, 1934-1991: Success or failure, in L. Randall (ed.), *Reforming Mexico's Agrarian Reform*, Armonk, New York, M.E. Sharpe.

Winters, P., A. De Janvry and B. Sadoulet (1999): *Family and Community Networks in Mexico-U.S. Migration*, GSARE working paper, No. 12 (http://www.une.edu.au/febl/GSARE/arewp.htm).

Population ageing *and pension* systems in *Latin America*

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This paper will examine the effects of population ageing on the medium- and long-term evolution of pension systems in Latin America and the Caribbean. It is organized into six sections. After the introductory section, section II provides information on ageing and pension system trends in the Latin American countries, with some references to the international context. Section III gives indicators, data and methods of analysis, and examines the effects of ageing population structures and rising life expectancy on pension system variables: spending on pensions, the financial position, pension liabilities and the implicit rate of return; it also includes a critical analysis of the criteria that are generally used to evaluate the sustainability of unfunded systems. Next, section IV provides a more systematic introduction to the concept of and indicators used for implicit pension debt, gives estimates of the scale of the pension liabilities that have to be made explicit when the switch to a funded system takes place and analyses the effects of the age structure and adult mortality rates in the Latin American countries. Section V looks briefly at the fiscal transition costs that have to be coped with when this type of reform is applied and, lastly, section VI contains a summary and conclusions.

I

Introduction

Over recent decades, the Latin America and Caribbean region has undergone substantial demographic changes that have altered the population base and the workings of the institutions that transfer resources between generational groups. One particular manifestation of these demographic changes, population ageing, is directly linked to developments in social security systems, and as the tendency towards ageing intensifies its effects will increase in scope and scale, as is shown very clearly by the historical experience of the more developed countries.

This is the essential standpoint of this paper, which examines the effects of population ageing on medium- and long-term developments in pension systems. This synthesis is based on studies carried out in recent years at CELADE and in collaboration with the Development Finance Unit of ECLAC that deal with the demographic and financial aspects of the region's pension system reforms.

First of all, the analysis focuses on the effects of changes in the age structure and in the mortality rates of the adult population on certain indicators of unfunded systems. It then deals with the transition from unfunded systems to funded ones, and in particular with the influence of demographic variables in determining pension liabilities and the fiscal costs of transition. In so doing, the paper brings together and analyses a variety of facts and results brought to light by applied research and uses medium- and long-term forecasts to consider how far these relationships may extend.

Every effort has been made to examine these issues systematically, but there are many important matters that are not addressed in this presentation. For example, it does not deal with general equilibrium relationships, except for some references made in relation to associated topics. Many aspects that have given rise to major debates, such as the relative merits of funded and unfunded schemes, and of State-run systems and privately managed ones, are touched upon only insofar as they contribute to an understanding of the relationships with which this article is particularly concerned.[1] The effects of gender differentiation, which become more important as populations age, are another relevant subject not addressed here (see Arenas, 2000; Cox, 1999 and Bravo, 1999).

The more specific approach taken here, however, does open the way to a clearer presentation and understanding of the effects of demography on different aspects of pension systems. Accordingly, the paper is organized as follows. Section II provides background information on ageing and pension system trends in the countries of Latin America, with some reference to the international situation. Section III explains the reasons for the analytical model approach used and examines the effects of ageing population structures and greater longevity on four important variables of unfunded systems: spending on pensions, the financial position of the system, pension liabilities and the implicit rate of return of the system. This section also includes a critical analysis of the criteria used to assess the sustainability of unfunded schemes.

Section IV provides a more systematic introduction to the concept of the implicit pension debt and the way this is measured, and gives estimates for the scale of the liabilities that have to be made explicit when the transition is made to a funded system. It also analyses the effects of the age structure and adult mortality in the Latin American countries. Section V briefly examines the transitional fiscal costs that have to be met when this type of reform is carried out, and section VI contains a summing up and closing remarks.

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[1] A useful contribution to this debate would be a comprehensive analysis of the most important advantages and limitations of the different schemes, including the numerous demographic, economic and political issues involved and the development strategies of the countries where the assessment is to be applied. This is far beyond the scope of the present study.

II

Population ageing and pension systems: Latin America in the international context

Having passed through the early stages in the demographic transition, in which child mortality fell and fertility was sharply reduced, the population of Latin America is beginning to age. Over-60s make up the fastest-growing population group in the region: their numbers, currently around 40 million, are expected to double within 20 years. The proportion of the population aged 60 and over is still modest by comparison with the more developed countries of the world: it now stands at just under 8% in Latin America, compared to about 16% in the United States, 20% in Europe and almost 23% in Japan (United Nations, 1998). Nonetheless, mortality in the region has been falling substantially over the course of this century, and is now fairly low in many countries; average life expectancy at birth has now reached the 70 mark, and life expectancy at 60 is almost 20 years (ECLAC/CELADE, 1998) in the region as a whole. In virtually all the countries of the region, reductions in national fertility rates have tended to follow reductions in mortality after a relatively short time lag, in most cases less than two decades (Bravo, 1992). Taken all together, these trends imply that ageing, as measured either by the "old" proportion of the population or by the old-age dependency ratio, is going to accelerate over the coming decades, and is going to do so at a much faster rate than was seen in the populations where ageing is now most advanced. Changes in these indicators which took from six to ten decades to come about in the developed countries are expected to take only two to three decades in most of the Latin American countries.[2]

As is the case with almost all socio-economic and demographic variables in the region, there is great diversity between countries as regards ageing: some (for example Bolivia, Honduras and Nicaragua) still have fairly young age distributions and will continue to do so for many years to come. A number of countries are at intermediate stages in the demographic transition and are projected to age significantly over the next few decades (including the two most populous ones, Brazil and Mexico), while in a few countries ageing is already fairly advanced, such as Argentina, Uruguay and some of the Caribbean countries. In countries such as Chile, Costa Rica and Panama ageing is only slightly less advanced, with low mortality not yet being matched by such low fertility rates. Cuba is a special case, as in no other country of the region has fertility declined faster or more sharply since the 1960s, so that in just over a decade the ageing process will be more advanced there than in any other country. Ageing also varies within countries, between socio-economic groups and by gender. As has been documented in detail elsewhere, the specific social context, and the particular sequence of events during the demographic transition, also vary from one country to the next (Guzmán, 1996 and Cosio-Zavala, 1996). The different demographic contexts will be taken into account in the discussion that follows, to the extent that they affect ageing patterns.

As regards the formal public pension systems that are analysed here in relation to population ageing, these are not at all times and in all places the most important means of providing economic support to the elderly. Intergenerational transfers, effected through family/community or market mechanisms (Sauvy, 1953 and Lee, 1995), have historically been important in both developing and developed countries, and still are.[3] In Latin America, some countries began to institutionalize their pension systems in the early twentieth century (examples being Argentina, Chile and Uruguay), but

[2] For more extensive analyses of ageing tendencies in the region, see Chackiel (2000) and Villa and Rivadeneira (2000).

[3] The evidence reviewed by Lee (1995) indicates that in traditional societies intergenerational transfers are "downward" overall, i.e., they pass from the older members of the population to the younger ones. This also holds true for family transfers in developed countries today. It is the strong "upward" movement of transfers channelled through saving capital accumulation and the public sector (including pensions) that has produced the net upward direction of intergenerational transfers in more developed societies.

most national systems became more comprehensive in the post-war period. Since their inception, these systems have expanded their coverage and brought major benefits to a significant proportion of the elderly population. However, they have also suffered from a number of problems. They have had difficulty in achieving the ideal of universal coverage, ensuring full and timely collection of contributions, protecting the real value of reserve funds and making the contribution and benefit adjustments that have become necessary as population structures have changed and systems have matured (Mesa-Lago, 1985 and Uthoff, 1997). These problems have built up over the years and have been compounded by the regional economic crisis of the 1980s, which brought administrative and financial shortcomings more clearly to light. These factors weighed heavily in the pension scheme assessments and proposals for reform that were made in that decade and put into effect in the 1990s. In the following sections we shall examine some of the reform issues from the point of view of population ageing and its implications for financing and intergenerational distribution.

In the Latin America region, as in the rest of the world, most public pension systems are unfunded and are backed by relatively small reserves.[4] Public spending on pensions has grown steadily worldwide and now averages between 8% and 10% of GDP in the Organisation for Economic Co-operation and Development (OECD) and the countries of eastern Europe (World Bank, 1994 and Dumont, 1998). In many industrial countries, social security spending is one of the two or three biggest government expenditure items; in the United States, social security is now the biggest government programme, having overtaken defence in the early 1990s. Forecasts by OECD (Leibfritz and Roseveare, 1995) predict that over the twenty-first century pension payments could range from 5% to 20% of GDP and that deficits could be from 0% to 10% of GDP, unless substantial adjustments are made over the coming years. The main factors influencing these forecasts are the long-term trend towards population ageing and the fluctuations predicted in the age structure of the population as a result of the baby boom in the early 1960s.

In Latin America, by contrast, the overall level of pension spending is similar to that of Asia,[5] averaging around 2% to 3% of GDP. Comparison of this aggregate expenditure level with the ageing indicators referred to earlier shows that there is a large gap between the Latin American countries and the more developed regions and countries, whose ageing indicators are double or treble those of Latin America, but which spend four or five times as much on pensions as a proportion of GDP. We shall analyse these differences further in the following section.

Before turning to a more thorough evaluation of the effects of ageing, it is worth glancing at the global implications of this phenomenon in the coming decades. As figure 1 shows, the adult ageing process (measured by the old-age dependency ratio) is expected to accelerate in all regions of the world over the next few decades, even in Europe and North America where ageing is already well advanced. These changes are quite substantial: whereas in 1990 the old-age dependency ratio (population aged 65 and over in relation to the population aged 15 to 64) varied from 6% to 18% in different regions (the world average being 10%), it is forecast that by 2030 all regions except Africa will have dependency ratios of between 16% and 35% (with a world average of 17%).[6]

The chart shows that the population of Latin America and the Caribbean will age faster than the average, as the old-age dependency ratio there is forecast to reach the world average in 2030, but starting from a below-average value (8%) in 1990. By 2050 the Latin American ratio will have more than tripled to stand at around 27%, around three percentage points above the world average. The strength of this projected trend is only surpassed by longer-term projections for the European and OECD countries, which show the greatest ageing effects on pension systems hitherto estimated (Roseveare and others, 1996 and Calot and Chesnais, 1997).

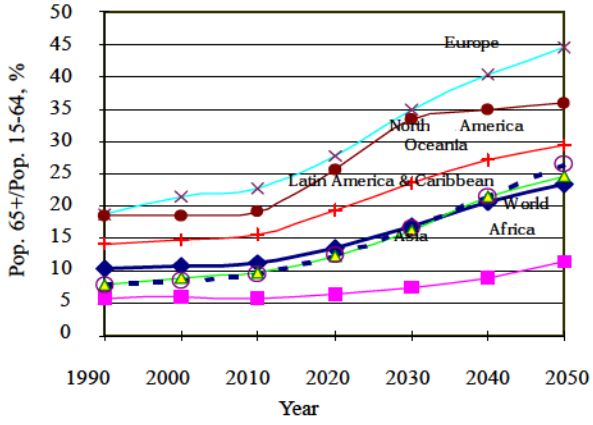
When these changes occur in situations where pension systems are maturing, and where there are

[4] A notable exception is the United States, where the important old age, sickness and death insurance (OASDI) fund will carry on growing for at least another decade to provide for the retirement of the large baby boom cohorts. There is considerable controversy, however, over the liquidity and real economic value of the assets making up this fund.

[5] There are a number of differences between the two regions, however: in Asia, public systems are generally of more recent creation, and tend to cover a smaller proportion of the workforce and the elderly (Kinsella and Gist, 1995).

[6] A simple interpretation of this tendency in terms of pension system variables is that, simply as a result of population ageing, contribution rates would have to increase by around 70% over this period to prevent the financial position becoming worse than it was in 1990.

FIGURE 1
World ageing outlook, by region, 1990-2050
(Population aged 65 and over/population aged 15 to 64)



Source: United Nations (1998).

restrictions in the labour market that manifest themselves in high unemployment and low earnings growth, it is clear that these demographic trends will compound the adverse economic effects and the existing structural problems affecting public systems. As will be seen in the following sections, however, it is certainly wrong to interpret such difficulties as evidence that demographic trends are making these systems unsustainable, and that they are bound to lead to "bankruptcy" or an insurmountable crisis. Countries can supplement existing government-run unfunded systems with privately managed funded schemes or other (mixed) components, as some are now doing. However, numerous studies and different country experiences throughout the world make it plain[7] that the demographic tendencies referred to here do not show that full funding is the sole or necessary solution, or the most desirable one, for the problems of pension schemes, as some observers believe. Most analysts now agree that thorough policy studies and assessments should consider different options, including varying degrees of public/private mix and funding, benefit- and contribution-defined schemes (Mesa-Lago, 1994; ECLAC, 1998; Thompson, 1999; Orszag and Stiglitz, 1999 and Holzmann, 1999), taking into account the different demographic, economic and political conditions obtaining in different countries.

The following sections of this paper will look at medium-term trends in these systems from a broad demographic point of view. First of all, a range of pension system indicators, and their relationship with ageing, will be analysed. Attention will then turn to unfunded pension liabilities and the influence on these of the population age structure and old-age mortality. The paper will then go on to consider the fiscal costs of unfunded-to-funded (U-F) transitions, after which it will conclude with some final remarks.

III

Pension system indicators over the course of the ageing process

1. Indicators, data and methods of analysis

Almost all pension system indicators are influenced by demographic variables, and particularly and most directly by population ageing. For this paper we have chosen four variables to illustrate our analysis of the effects of ageing on different aspects of unfunded pension systems: i) annual expenditure on pensions, expressed as a percentage of GDP; ii) the annual financial balance of the pension system, i.e. revenue minus outgoings, which can be expressed as a proportion of system revenue or of GDP; iii) the implicit pension liability, also known as implicit pension debt[8] and iv) the implicit (or internal) rate of return of the system, as represented by flows of contribution payments and sums disbursed by way of pensions during the lifetime of a cohort. Appendices 1 and 2 give

[7] See, among many others, Blanchet (1990), ECLAC/CELADE (1996), Chand and Jaeger (1996), Conseil d'analyse économique (1998), Conte-Grand (1995), Reynaud, coord. (1998) and ECLAC (1998).
[8] As is explained in more detail in section IV below, there are a number of possible ways of measuring pension liabilities in unfunded systems. In this study we shall use the present value of the future pensions that will be received by pensioners and of the contributions already paid by the economically active population at a given point in time, expressed as percentages of GDP.

more details about the concepts, measurements and data used to calculate these.

The most standard indicators, such as annual pensions spending or the financial balance of the system, are periodic measurements (i.e. annual flows) which can be used to quantify the burden of the pension system on the national economy, but which provide little information about the medium- or long-term financial sustainability of the system or its distributional performance, especially in different generational groups. These aspects are captured better, although still only partially and imperfectly, by other indicators that summarize contribution and benefit flows over the life cycle. Two of these are implicit pension debt and implicit system rate of return, which are analysed in the following sections. We have chosen *d*, the old-age dependency ratio,[9] which from now on we shall simply call the dependency ratio, as the population ageing indicator to be used for analysing the pension system indicators selected. Historically, ageing of individuals or population cohorts, as measured by rising life expectancy, tends to precede and then overlap with changes in *d*, although the correlation between these two forms of ageing is not a strict one and their consequences for pension systems differ in nature and extent, as will be shown in the following sections.

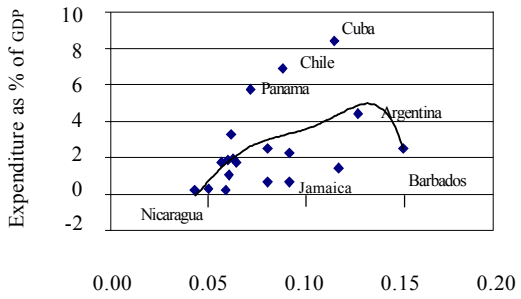
Panel A of figure 2 shows observed pension expenditure values as a percentage of GDP, estimated on the basis of data compiled by ILO (1997) on national social security expenditure in the period 1991-1993. These estimates relate to old-age, survivors' and invalidity pensions in the public and private sectors and exclude transfers to other schemes. They are to be treated merely as an indication of magnitude, since the exact figure may vary depending on the specific measurement criteria being used. Again, no information is available for Brazil, Mexico, Peru and Uruguay, four very important countries in the region.

Nonetheless the data, plotted against the proportion of the population aged 60 and over, suggest a couple of things. Firstly, as had been predicted, the spending of many countries is of the order of 2% of GDP or less, among these being an appreciable number of Caribbean and Central American countries, Bolivia and Ecuador. The expenditure of the remaining countries ranges from a low of around 3% of GDP in Colombia to a high of

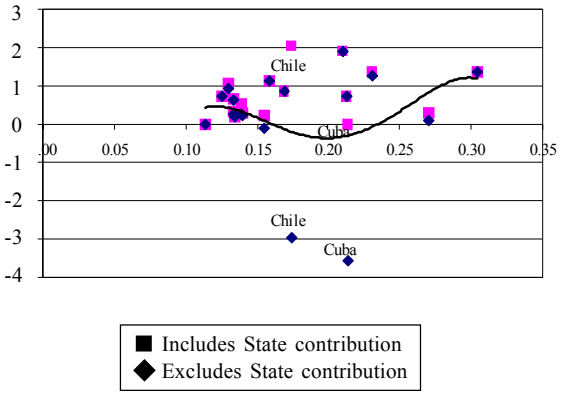
FIGURE 2

Latin America and the Caribbean (selected countries): Pension system expenditure and financial balance, by degree of population ageing, 1990-1993

A. Pension expenditure and population ageing



B. Financial balance and old-age dependency ratio



Source: Author's estimates based on ILO (1997), ECLAC/CELADE (1999) and United Nations (1999).

over 8% in Cuba, with countries such as Argentina, Chile and Panama being at an intermediate level. Taken all together, these data reveal spending levels that are low to medium by international standards. Secondly, although a number of the countries with high spending are in the medium to high ageing categories by regional standards, there is no obvious sign of a close relationship between the degree of ageing and pension expenditure. This partly reflects problems with the comparability of expenditure data, but also, and probably more importantly, differences in the population coverage of pension schemes, contribution and replacement rates, eligibility criteria and the degree of system maturity.

These two types of limitation make themselves felt to at least the same degree when the financial balance

[9] For the purposes of the present paper, this ratio will henceforth be between the population aged 60 and over and the population aged 20 to 59.

of the system is analysed. There are comparability problems not just with expenditure, as before, but also with revenue, which is affected by international differences in the way system components and programmes are defined and in accounting conventions, particularly as these relate to the treatment of transfers from other programmes and to State contributions net of the contribution made by the public sector as an employer (appendix 1). Bearing these caveats in mind, the estimates for the financial balance of pension systems given in panel B of figure 2 suggest that a surplus is the norm, particularly in countries whose schemes are of more recent creation. The exceptions are the small deficit of Panama and the more substantial ones of Chile and Cuba.[10] These last two countries are special cases: the revenue and expenditure accounts of Chile are strongly affected by the transition deficit resulting from the move towards full funding, and those of Cuba by the fact that the State absorbs the primary imbalance, so that the country's system is precisely in balance when the State contribution is included. The transversal relationship observed between the demographic dependency ratio and the financial balance is even weaker than in the case of spending, for reasons similar to those already adduced.

To sum up, the data just analysed provide useful general information on the indicators and relationships we are concerned with, but offer rather limited possibilities for more detailed and specific study.[11] For the purpose of isolating and analysing the effects of ageing on pension systems, a more viable and productive approach is to use individual country models, broken down by age, that take account of the key parameters of the system. The following model, which has had to leave out a number of the details and peculiarities of pension systems (appendix 2), gives rough orders of magnitude for the indicators we are concerned with, and not exact calculations.[12] The drawbacks of simplification are compensated for by the possibility of studying a wider range of ageing levels (outside the range observed hitherto in Latin America) and examining other important system variables, such as pension liabilities and the system's internal rate of return, which are extremely difficult or impossible to calculate directly when existing data are the only basis used.

2. Effects of ageing on the expenditure and financial balance of the system

Figure 3 illustrates the general tendencies forecast for these two variables as the population ages. The figures shown assume fixed values for the contribution rate (c = 12.2%), wages as a share of GDP (s = 34.3%) and the number of workers covered by the pension system as a proportion of all waged workers (k = 0.76), these being the averages for the Latin American countries around 1990. In the case of the financial balance, it is further assumed that no debt or reserve fund capable of offsetting periodic imbalances has been set up; in other words, our definition of balance reflects the primary surplus or deficit.

Figure 3 isolates the demographic effect in the usual way by setting the value of other accompanying factors and examining the change in the indicators that concern us within a plausible range for our ageing variable, *d*. Four reference points are graphed for each system indicator. The first two points, from left to right, are obtained from the demographic profile (adult age structure and mortality schedule) of Nicaragua in 1990 and Uruguay in 1990, these being the countries that have the youngest and oldest age structures in the region, respectively. In addition, to provide an idea of the way pension system indicators may change over the longer term, the third point corresponds to the demographic profile of France in 1990 and the fourth one to the profile projected for France in 2050 (Dinh, 1995 and Meslé and Vallin, 1998).

Panel A of the chart shows the linear relationship between pension system spending and ageing (indexed by *d*), other things being equal, that is embedded in the model conditions. The values for the data confirm the fact, already documented in section II of this paper, that when systems cover a fraction of a demographically "young" working-age population, pension spending may be just 1% or 2% of GDP, but that this can reach levels of close to 10% when the country's population reaches an advanced state of ageing, even if coverage remains as incomplete as it is at present in Latin America as a whole (about half the workforce). Spending levels can be even higher in practice when coverage is wider

[10] Argentina and Uruguay also had sizeable social security deficits in the late 1970s and early 1980s (Mesa-Lago, 1991, table 9).

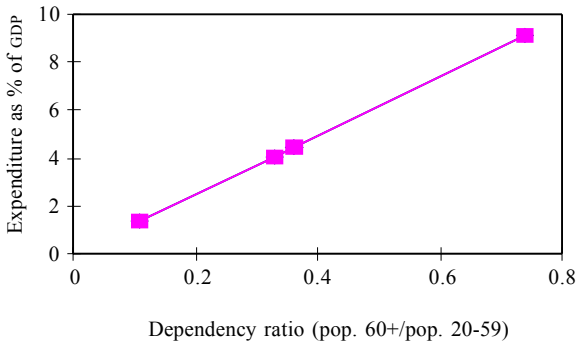
[11] In theory, another approach would be to carry out longitudinal analyses on countries with reliable chronological series of spending and revenue data. This requires consistent, complete statistical series covering at least four or five decades so that substantial changes arise in the indicators of ageing, something that limits yet further the scope for carrying out this kind of analysis in the case of most Latin American countries.

[12] The calculations are strictly valid if the rules of the system, labour force participation, coverage rates and the degree of compliance with contribution liabilities are constant in each country.

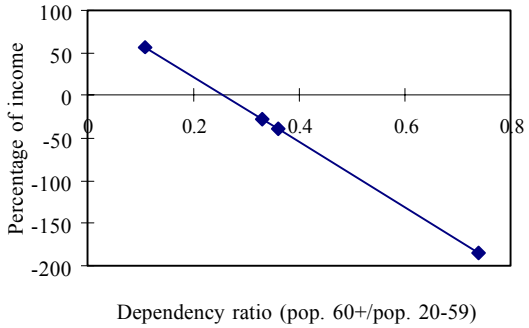
FIGURE 3

Simulation of pension system expenditure and financial balance by degree of ageing, in accordance with the model conditions[a]

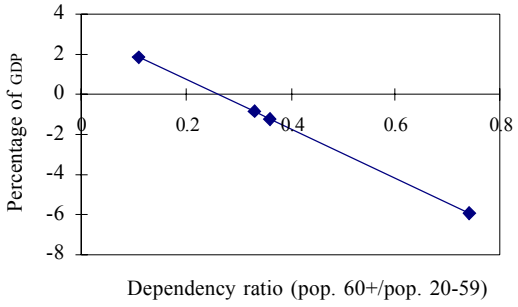
A. Ageing and pension expenditure



B. Ageing and financial balance of the pension system (% of income)



C. Ageing and financial balance of the pension system (% of GDP)



[a] As described in section III, part 1. The suppositions and equations used in the model are given in appendix 2. The parameters used in this simulation are "typical" ones, i.e. averages for Latin American pension systems and labour markets, while demographic conditions are allowed to vary within the range given. From left to right, the points represent the demographic profiles of Nicaragua in 1990, Uruguay in 1990, France in 1990 and France in 2050.

or universal: pension spending in Italy is already about 15% of GDP and, as has already been noted, it is expected to go even higher than this in some OECD countries over the twenty-first century.[13]

While expenditure levels give an indication of the weight that pension programmes have in the economy, a better idea of the aggregate financial performance of the system is obtained from the balance, i.e. the difference between the system's annual revenue from contributions and its yearly pension payments. Panels B and C of figure 3 show two possible variants of this indicator: the balance as a proportion of system revenue and as a percentage of GDP. Both are also linear functions of d, in accordance with the conditions of the model. These lines suggest that, if the system variables (contribution rates, replacement rates and membership conditions) are not adjusted, population ageing can turn a surplus in the initial balance when populations are "young" (d less than 0.3) into substantial deficits, which may amount to as much as twice system revenue, or 6% of GDP, when population ageing is very advanced (d of around 0.8), given constant parameters which are the averages for the Latin American systems. This theoretical possibility, however, has not hitherto come about in the region. In the maturer and more "aged" systems of the more developed countries, the system variables (contributions, benefit amounts or eligibility conditions) are usually adjusted before such extreme situations arise.

3. Sustainability of unfunded systems and intergenerational equity

It is not always easy to define what a "sustainable" level of pension spending or an "unsustainable" deficit level is, since in practice this involves many simultaneous variables. In public debate, political considerations may lead to a relatively modest current or projected deficit being described as excessive with a view to justifying reforms involving a change in the system, while substantial deficits may not be regarded as a serious problem if they can be financed by increasing public debt, which will have to be coped with by future governments and paid off by future generations of taxpayers.

But even if political considerations are left aside for analytical purposes, the definition of sustainability

[13] A simulation for typical Latin American pension system parameters based on the present model (Bravo, 1999) shows that with universal coverage spending levels in the region would be roughly double those shown in panel A of figure 3.

is still complex, particularly when it is limited to the standard indices of the periodic system. For example, an extraordinarily high level of pension spending (as in Italy, for example) is chiefly a reflection of the fact that the country's population is currently one of the oldest in the world. It is very natural that, both at the individual level and in society as a whole, the resources used to finance consumption by the elderly should increase as people live longer and longer. This cannot in itself be regarded as an "unsustainable" tendency; insolvency will only occur if insufficient provision is made to finance this increased spending over a reasonably long period that is consistent with the time horizon over which the pension system contracts liabilities and pays out benefits.[14]

The financial balance (of the period) is more informative in this regard, but still falls short of providing a clear solvency test, since primary financial imbalances can arise simply as a result of the different degrees of maturity that systems have reached or of temporary economic fluctuations, which do not imply insolvency in the sense just indicated. When there are large, persistent deficits (such as the ones projected for a number of OECD countries over the twenty-first century, assuming all variables except ageing remain unchanged) it is more obvious that adjustments are needed, but even here a clear distinction needs to be drawn between the "sustainability" of continuing parameter values (contribution levels, benefit calculation methods, eligibility conditions), which can be changed, and the viability of the system's general design, which has more to do with its suitability for a particular type of development model and is more a function of economic policy considerations than of the degree of ageing in the population as such.

Full actuarial analyses that take account of present and projected system parameters are a more satisfactory way of assessing the solvency and the medium- to long-term sustainability of systems. Indeed, if there were certainty about the current values and future trend of the different system variables, the actuarial balance would be an excellent summary measure of solvency (in the medium term). Many developed country systems have well-established actuarial assessment practices. In most of the Latin American countries, unfortunately, analyses of this kind are not carried out consistently (see Mesa-Lago, 1985 and 1991), although it would be a great help in establishing common ground for policy discussions if they were (Mesa-Lago, 2000). Nonetheless, uncertainty about the future, particularly in the medium to long term, means that in any specific instance these assessments have to be interpreted with caution, since the accuracy of the results depends directly on the validity of the assumptions made.

Policy analyses are making increasing use of stock/lifetime summary measures of system accounts to examine the comparative medium- to long-term financial stance of the systems concerned.[15] These are discussed in more detail in the following section. One of these stock measures is the implicit pension debt (or liability), i.e., the present value of unfunded pension system liabilities towards pensioners and active workers at a given point in time. This indicator, calculated in accordance with the model conditions, is graphed in panel A of figure 4 against our preferred index of ageing *d*. It can be seen that it rises in an almost linear fashion against the dependency ratio within the range given.

The implicit pension debt is a useful summary indicator and, as the following sections show in some detail, is essential for understanding and measuring the fiscal cost of closing an existing pay-as-you-go system. It does not however tell us directly whether a particular system is "sustainable" or not. As in the case of spending, the pension liability rises naturally as the system matures and expands its coverage and as the population ages. Again, if for example a large implicit debt can carry on being "rolled over" to future generations (as happens in a continuing pay-as-you-go system) under conditions acceptable to workers and pensioners, then there is not a strong case for deeming it unviable.[16] Furthermore, it is possible for a low dependency system to have a small implicit debt and, at the same time, a significant permanent deficit, as demonstrated by the model estimates for El Salvador and Guatemala (not shown here). In fact, Nicaragua, a country with a low pension debt, had a modest operating deficit in the early 1990s. The opposite situation can also occur: countries with a high pension debt and a relatively aged population that can show sustained financial balance or even a budgetary surplus

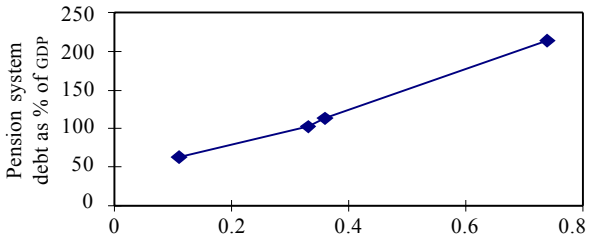
[14] Baldacci and Tuzi (1999) provide an interesting analysis of demographic and labour market changes and the sustainability of the Italian pension system.

[15] See Franco (1995) for a good critical discussion of the different indicators.

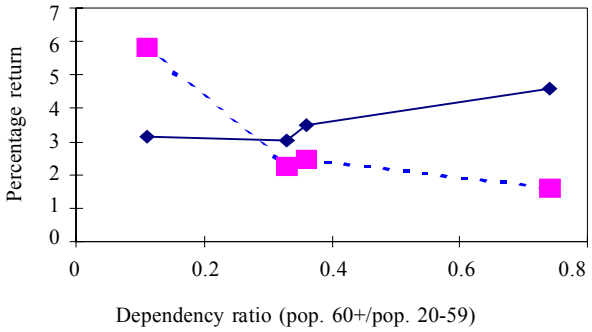
[16] From a macroeconomic point of view, a valid criterion, particularly for highly indebted countries with relatively mature systems, is the *increase* in public-sector liabilities (including those of the pension system). Chand and Jaeger (1996) provide an excellent discussion along these lines for a number of industrialized countries.

FIGURE 4
Simulated values for implicit pension debt and implicit rate of return of the pension system, in accordance with the model conditions[a]

A. Implicit pension debt and ageing



B. Pension system rate of return and ageing



[a] As described in section III, part 1. The suppositions and equations used in the model are given in appendix 2. The parameters used in this simulation are "typical" ones, i.e. averages for Latin American pension systems and labour markets, while demographic conditions are allowed to vary within the range given. From left to right, the points represent the demographic profiles of Nicaragua in 1990, Uruguay in 1990, France in 1990 and France in 2050.

(for example, the model estimates for Chile and Uruguay). Costa Rica, a relatively high debt country, had an operating surplus in the early 1990s; a more extreme case is that of the United States, which has a large pension liability but a substantial periodic balance surplus. A number of other OECD countries have even greater pension liabilities but operate with modest deficits or balanced budgets.

In some cases, a more consistent diagnosis can be obtained when spending, the financial deficit and the pension debt are all substantial, as for example in Argentina and Uruguay during the 1980s. When all the indicators point in the same direction, the need to make major adjustments to the system becomes more obvious. In many theoretical and real-world situations, though, the indicators referred to do not permit of an unambiguous interpretation, which supports the idea that there is no generally applicable rule to justify the need for one particular type of reform on the basis of ageing trends alone.[17]

Another way of approaching the problem is to ask how the system affects different generational groups. In fact, one increasingly widespread approach to determining the sustainability of public policy or a particular government programme, which is what we are concerned with here, is to consider that a system or policy suffers from intergenerational inequity if it provides benefits to current generations at the expense of the economic welfare of future ones. In extreme cases, a particular programme or policy may prove to be more absolutely unsustainable if it requires future generations to bear an excessively large net lifetime tax burden. An example of this situation is provided by Gokhale (1995), who uses generational accounts for the United States to calculate that if current government economic policies were continued, future generations would have to bear a net tax burden 35 percentage points higher than that borne by current generations, yielding the obviously inconceivable figure of 80% of lifetime income.

Panel B of figure 4 plots the implicit rate of return of the pension system (r), which reflects the net lifetime benefit of participating in the system for a given individual or cohort. What r measures is the excess proportionate present value that the individual or cohort obtains in pension benefits over and above the value of the contributions paid into the system over their working life, an indicator analogous to the one used to measure the rate of return on financial investments.[18] As in the case of the variables plotted previously, this indicator is calculated in accordance with the general assumptions of our basic model, with two alternative scenarios now being considered: firstly, the case where the system variables remain constant throughout the ageing process and the general

[17] See Blanchet (1990 and 1998) for a fine, nuanced discussion of the relative merits of funded and unfunded systems under changing demographic conditions in a context of general balance, which refutes some common misconceptions about the subject.

[18] See Bravo (1996) for a more detailed discussion of the implicit rate of return and the way this is affected by different factors and policies. Related effects on lifetime wealth are studied in Auerbach and Kotlikoff (1987), Arrau (1991) and Cifuentes (1995) in the context of general-equilibrium, overlapping-generation models.

government budget absorbs any imbalance that may arise in the pension system and, secondly, the case where the ratio between contributions and benefits is planned in such a way that it adjusts to changes in the demographic profile and financial balance is obtained at all times. Neither of these two functions of *d* is strictly linear, for the reasons given below.

The first line shows that when the contributions/benefits ratio remains constant, the greater adult longevity that occurs in the ageing process leads firstly to a slight fall in r, then to a large increase. This happens because the greatest declines in adult mortality are obtained first for the "young adult" or working ages, while later declines mainly occur at more advanced (retirement) ages. This means that the ratio between the number of years lived as a pensioner and the number lived as a worker first remains constant or declines somewhat, then rises sharply.

The second line shows that if the contributions/benefits ratio always stays at levels that produce financial balance, then the system rate of return declines rapidly with *d*, at least until "moderate" ageing levels are reached, after which it falls at a slower rate. The explanation is as follows. When the population ages in a balanced system, contributions have to be increased or benefits reduced. Given that the early stages of ageing in the adult population are primarily due to declining fertility –and not to survival to advanced ages– the adjustment in the contributions/benefits ratio is considerable by comparison with the modest improvements in adult survival rates. After $d = 0.8$, the falls in r become much smaller, as much of the change in *d* is produced by increases in the ratio between the number of years lived at advanced ages and the number lived at young adult ages, and this has a positive effect on r which largely offsets the negative effect of the necessary increase in the contributions/benefits ratio.

Which of these two scenarios –the one where contribution and replacement rates are fixed or the one that produces financial balance– is more "sustainable", in the sense of minimizing intergenerational inequity? The chart suggests that maintaining fixed rules in the system during the early stages of the ageing process (up to $d = 0.3$, in figure 4) leads to a reasonably stable rate of return, while at the more advanced stages of the ageing process the financial balance rule would give smaller differences in the rate of return between cohorts. If the same data are interpreted from a slightly different point of view, it transpires that in the early stages of the process disproportionately large transfers would be made to the early cohorts if the system worked on the basis of financial balance, i.e., if all revenue were transferred automatically in the form of pensions, without considering the contributions made by the pensioners. The chart also illustrates the risk of providing excessively generous benefits to the later cohorts, since the system will go into a state of chronic underfunding (after $d = 0.3$, in the chart) if the benefits/contributions ratio does not adjust to a more elderly demographic context.

Consequently, in the long-term ageing process the following sequence of policies could prevent large differences arising in the rate of return obtained by different cohorts: i) fixing both contribution and benefit rates during the early stages of the ageing process and ii) when ageing is further advanced, changing over to the financial equilibrium rule, which would ensure greater intergenerational equity at this stage. The first part of this sequence –offering defined benefits in exchange for more or less defined contributions– has in fact been the rule traditionally followed by many countries; most current systems are still benefit-defined. As more recent experience shows, however, switching to the second stage rule ("financial balance") has proved more problematic, since although fiscal constraints make the changeover virtually unavoidable, this entails a loss (by comparison with the no-change scenario) for present generations of workers, to which there is often political resistance.[19] If today's cohorts of workers are successful in holding out against change and resisting direct or indirect financing, however, the current deficit will be transferred to future generations, which means that intergenerational equity will be impaired.

Given this situation, two basic approaches can be taken to achieving financial balance. The most common and traditional one, expressed in terms of a defined-benefit logic and terminology, involves "parametric" changes or reforms in which contributions are changed, benefits adjusted or eligibility conditions made more stringent. The second approach consists in making explicit the dual objective of financial solvency and intergenerational equity and designing the system in a way that can accommodate both. One approach of this kind, known as the "notional contribution" scheme,

[19] The changeover to the financial balance rule can be facilitated enormously if the surplus generated since the system began is suitably invested and is used to cover deficits when the system matures. This, indeed, is sensible advice for countries that have young populations and set up their systems recently, but it comes too late for those that have already spent the surplus or have let the real value of reserves be eroded by negative rates of return.

has been applied in Sweden, Italy and Latvia, and is under consideration in other eastern European countries (Holzmann, 1997 and ECLAC, 1998). Essentially, this is a contribution-defined scheme financed mainly on the pay-as-you-go model, with only moderate reserves being built up to smooth over any temporary imbalances. Under such schemes individual records are created (analogous to the "accounts" of funded systems) and these accrue contributions plus interest at a rate determined by the annual growth in total wages. By comparison with other unfunded schemes, this kind of system has the merits of actuarial fairness, a greater likelihood of financial balance being maintained in the medium to long term, and less intergenerational inequity. In the region it is worth noting the case of Brazil, the country which is moving most clearly in this direction (Pinheiro and Vieira, 2000 and Uthoff, 1999).

From the demographic point of view, this type of system has the advantage of adjusting endogenously to changes in old-age mortality and of providing reasonable protection against age structure or labour market fluctuations. In an uncertain world, contribution-defined unfunded systems such as this tend to improve intergenerational risk sharing and to increase expected lifetime welfare (Thogersen, 1998). Of course, the system is not immune to potential risks,[20] but these seem to be smaller than those affecting traditional benefit-defined systems or fully funded schemes. Proper actuarial monitoring is also essential to these schemes, in order to avoid imbalances lasting for extended periods.[21]

IV

Implicit pension debt: concept and measures

As has already been mentioned, the focus of public policy debate over pension systems is gradually shifting from short-term financial performance (current spending or deficit/surplus levels) to the medium- to long-term financial stance. This is especially true of the more developed countries, where population ageing began many decades ago and the process is far more advanced than in the less developed regions. In Latin America, a number of recent analyses have used medium-term projections that incorporate demographic trends in a more or less detailed way, among them being studies on Argentina, Chile, Colombia, Mexico and Uruguay (see Mesa-Lago, 2000, for a critical review of these) and on Brazil (Uthoff, 1999), in response to policy concerns that will be discussed later on. Some of these look explicitly at the notion of implicit pension debt.

One type of synthetic measure used in recent studies is "pension system liability", a stock measure that refers to the present value of liabilities towards those participating in the system (Van der Noord and Herd, 1994; Franco, 1995; Holzmann, 1997 and Vernière, 1997a). This type of indicator is based on the idea that in unfunded systems there is an implicit contract whereby the State, in return for workers' contributions, undertakes to pay the pensions of retired cohorts out of the contributions collected from the following (working-age) generation. In this case, it is logical to calculate the discounted (present) value of revenue and payment streams for a given point or period of time and number of cohorts. In the more developed countries where ageing is more advanced, the incentive for studying these liabilities is the general desire to evaluate the financial situation of the Government in the medium to long term (including spending, deficit and public debt levels) in the light of the current and projected degree of population ageing, which is affected by long-term tendencies and by the imminent effects of the baby boom which took place in those countries around four decades ago.

Some observers interpret the request made by Great Britain to the European Commission for the liabilities of unfunded social security systems to be included among the criteria for joining the single currency as a reflection

[20] Particularly the risks of low or negative returns from investment of the (relatively small) reserves and of contingent political pressure to follow the benefit formula for pensions, which may be perceived as giving a low wage replacement rate, especially during periods of high wage growth.

[21] See Valdés-Prieto (1999) for an analysis of the characteristics of these schemes and some of the problems that can affect them.

of the concern that, because the liabilities of the public system in the United Kingdom are smaller than in the other countries of the European Union, there was the risk of British taxpayers having to finance the liabilities of other countries or be penalized with higher interest rates to defray these liabilities (Vernière, 1997a, p. 2). In the United States, the emphasis is more on how government expenditure as a whole (including pensions and public health programmes) can be sustained when the baby boom generations retire, without severe consequences for the public finances and for intergenerational distribution. Again, more recently, the implicit liabilities involved and the cost of liquidating them emerged as an important consideration in the proposals for social security reform discussed during the 2000 United States presidential election campaign. In Latin America, interest is fairly recent as well, and the difference in the demographic context means that it is driven by concern not so much over population ageing as over the fiscal burden that this type of government expenditure may represent now and in the near future, against a background of budgetary reforms and constraints. This is the issue that will be dealt with next.

1. Definition and measurement

A variety of terms and specifications, with slightly different meanings and uses, are employed for the concept of implicit pension debt (or liabilities) (Holzmann, 1997 and Van der Noord and Herd, 1994). Three main definitions are: i) liabilities accrued to date, which represent the present value of pensions to be paid, considering only the rights accrued by workers and pensioners at a given moment and ignoring future contributions and rights not yet accrued; ii) closed system obligations, comprising liabilities towards all current workers and pensioners, including their future contributions and the rights that will accrue to them in future; and iii) open system liabilities, which also include contributions and rights that will accrue to new entrants to the labour force.

The most relevant definition for calculating U-F transition costs is of the first type. Which of the variants is used will depend on the reform scenario being considered: whether the changeover to a funded system is partial or total, whether it is voluntary or compulsory for different generations of workers (present and future), whether it is immediate or gradual, etc. In the discussion that follows, which is largely based on studies carried out by the author in collaboration with Andras Uthoff (Uthoff and Bravo, 1998 and Bravo and Uthoff, 1999), we shall use a definition that takes into account the future flow of pensions accrued by current pensioners, plus compensation of contributions to date for all those currently in the labour force. This definition departs slightly from the standard "accrued to date" specification: the first component is different in that it provides for reimbursement of past contributions instead of pension rights. The two measures should give similar figures but may not coincide closely in all cases.

The policy context, very briefly, is as follows. We know that recent reforms in Latin America have included adjustment of eligibility conditions and benefits and, in several cases, inclusion of at least one contribution and benefit funding component. These cases include the early reform in Chile in 1981 which, like those of Mexico (1995), Bolivia (1996) and El Salvador (1997) meant a complete switch from benefit-defined pay-as-you-go State systems to privately managed, fully funded individual contribution-defined schemes. Other reforms have retained a pay-as-you-go component by establishing mixed ("multipillar") or parallel systems, examples being those of Peru (1992), Argentina (1993), Colombia (1993) and Uruguay (1995).

The funding component is supposed to lighten the financial burden that pay-as-you-go systems place on the State budget in the context of the demographic and labour market trends referred to, to stimulate greater efficiency in the management of the system, to bring about higher national saving and investment and to promote the development of financial markets, where the pension funds are invested. The evidence for all these benefits is mixed, partly because in many countries that reformed only a few years ago it is too soon to tell. In the early case of Chile, the growth and development of financial markets and the corresponding regulatory framework are manifest, although it is not clear whether funding has led to substantial increases in national saving or productive investment (Uthoff, 1997) or whether it has helped to reduce management fees, which still amount to over 20% of contributions.[22] Several models suggest or predict long-term aggregate income and welfare benefits from U-F reforms (see Schmidt-Hebbel, 1997 and Valdés-Prieto, ed., 1997, and references therein), but it seems too early to evaluate this potentially important effect in most reform countries.

[22] Recent data (presented in Mesa-Lago, 2000, table 6) imply that management fees vary widely, from about 4% of contributions in Bolivia to over 30% in Argentina. See Valdés-Prieto (1999) for a more detailed analysis of fees and the difficulties involved in making rigorous comparisons between countries and firms.

Furthermore, what is of specific interest to this section, U-F reforms do not necessarily lighten the fiscal burden in the short and medium term. On the contrary, recent data reported by ECLAC (1998) and the analysis in this paper suggest that this transition actually generates large fiscal liabilities which have to be met by present and future generations of workers. These costs arise because the transition makes it necessary to recognize explicitly and pay off some or all of the implicit social security debt, while the contributions of those switching to the funded scheme cease to be received as income.

In the following sections, we shall seek to measure the size of the implicit pension debt and work out the associated fiscal costs using a simple model and the information available on demographic variables, the labour market and the pension system, and we shall analyse the factors and results for the Latin American countries considered.

2. Liability that has to be made explicit when the system is changed

The basic scenario envisaged is one in which an unfunded State system is completely replaced by a privately run fully funded system. In this case, the liabilities ("debt" owed by the Government for pensions), calculated at proper actuarial values, are represented by the present value of the pensions accrued and to be accrued in future years by all the pensioners in the old unfunded system, plus the present value of the contributions of affiliated workers who are active at the time of the reform.[23] To measure these liabilities directly and accurately, it would be necessary to have full, detailed chronological series of the age profiles of labour force participation, employment, coverage and compliance rates and earnings for, let us say, the last 40 years. Since this ideal database is not available in any Latin American country, we have developed a model that is able to provide a reasonable estimate using more widely available demographic, labour market and macroeconomic data.

The calculations make use of several highly simplifying assumptions, the most important of which are: i) an unfunded pension scheme has been in existence since 1950; ii) the overall system coverage rate has remained constant at the level of 1985 or thereabouts (an intermediate point in time between 1950 and 2020, the end of our projection period); iii) tax and replacement rates are the same as they were at the beginning of the 1980s (Mesa-Lago, 1991) and iv) the contributions of all the cohorts concerned begin at the age of 20 and continue uninterruptedly until they retire at 60. The full set of assumptions and the derivation of the equations that follow are given in Bravo and Uthoff (1999). Using this simplified framework, it is possible to obtain estimates of the pension debt for a fairly large number of Latin American countries.

Taking these assumptions, pension liabilities towards the economically active population (*Da*) can be expressed, as a proportion of GDP, as follows:

$$Da = c \cdot s \cdot k \cdot Aa$$

where c = contribution rate (expressed as a percentage of earnings); s = the wage mass as a share of GDP; k = ratio between the number of workers enrolled in the system (covered) and the total number of wage earners; Aa = readjusted average of the number of years for which the active population has been contributing.

In the same way, the debt owed to those who have already retired (*Dr*) is expressed as:

$$Dr = r \cdot s \cdot k \cdot d \cdot Ar$$

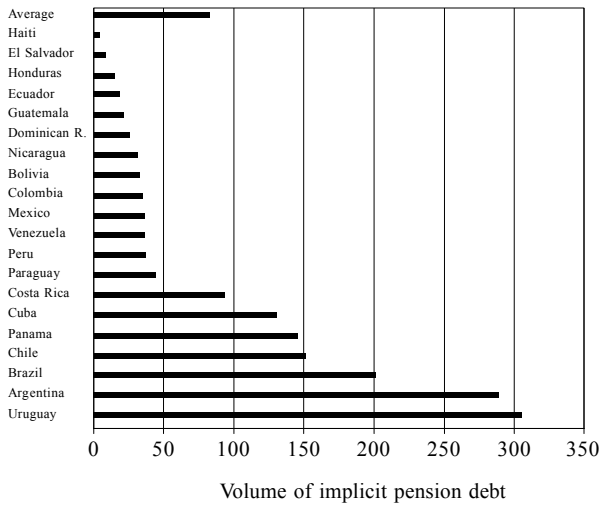
where r = replacement rate (percentage of wages); d = dependency ratio of the unfunded system (retirement-age population/working-age population); Ar = readjusted average of the expected number of years of retirement per currently retired person, and the other variables are as already defined. Both Aa and Ar are weighted readjusted averages, where weighting is by the number of people in the age groups concerned.

The estimates derived from this model are shown in figure 5; they are valid for our basic special case, where the discount rate is assumed to be equal to the rate of wage growth.[24] This chart shows that the implicit pension debt is substantial in most of the Latin American countries, even some where the population is young and the coverage of the system low, such as the Dominican Republic, Ecuador and Honduras. The pension debt is substantial (over 20% of GDP) in most of the countries and extremely high (over 200% of GDP) in those with older populations or systems with high coverage such as Argentina, Brazil and Uruguay.

[23] A natural alternative definition of this last component, that of pension rights accrued to date by those who are active at the time of the reform, is theoretically less well defined and empirically less tractable.

[24] The consequences of this assumption are dealt with in section V.

FIGURE 5
Latin America and the Caribbean: Implicit pension debt
(Percentage of GDP)



Source: ECLAC (1998), for the base situation where the discount rate equals the rate of wage growth.

By comparison, the level of pension liabilities in more developed and older countries is higher on average (of the order of 170% of GDP) than in the countries of the Latin America region, but varies less between countries, ranging from an estimated low of 113% in the United States to a high of 242% in Italy (Van der Noord and Herd, 1993).

It is interesting to note that in most of the countries for which information is available the implicit pension debt is not only large but, in many cases, is several times greater than the official public debt. Current estimates of pension debt put it at around a third of official public debt in Ecuador, one to two times the public debt in Colombia, Peru and Venezuela, more than four times the official government debt in Brazil and between 8 and 11 times the public debt in Argentina, Chile and Uruguay. These latter ratios also seem very large compared with those found in the more developed countries with older populations; for example, the implicit pension liabilities of France, Germany, Italy and the United Kingdom range from twice to four times their respective official public debts.[25]

Although several of the model's assumptions are crude and are valid only as an initial approximation, the estimates it produces, when calculated using the same basic data and parameter values, turn out to be reasonably close to other estimates based on alternative procedures. For example, Schmidt-Hebbel (1995), using a different method (the present value of projected deficits resulting from reform) and different parameters, places the implicit Colombian pension debt within a range of 59.2% to 88.1% of GDP, whereas our estimate (based on pre-reform parameters) is only 34.8%. However, if we use the same parameters as the study cited, we obtain an estimate of 62.5%, which falls within the lower end of its range of estimates. Our estimate of the Chilean pension debt, at 131% of GDP, is not far from the 126% figure given in Schmidt-Hebbel (1996, table 3.8). Our estimate for Brazil, at 201.6% of GDP, is within the range of estimates provided by other studies, which vary from 188% to 255% of GDP, depending on the assumptions made (Government of Brazil, 1998). As a final example, a calculation for France based on the present model yields an implicit debt of 224% of GDP, which is not far from the OECD estimate of 216%. Mesa-Lago (2000) refers to other estimates calculated using different methods, noting that they are not strictly comparable with the ones presented here.

3. Effects of the age structure and mortality patterns

Demographic variables (basically the population age structure and old-age mortality) affect the size of the debt although, as will be shown shortly, their impact is not as large as that of other (pension system and labour market) variables. The population age structure is represented directly in the system's "dependency ratio" (d = old-age population over main working-age population), but it also enters into the calculation of the average number of contributing years of the active population (Aa) and that of the expected number of retirement years per currently retired person (Ar). In the latter case, old-age mortality conditions determine the expected number of years of life remaining to each of the cohorts currently of retirement age.[26]

[25] The public debt figures (as a percentage of GDP) for the Latin American countries are for around 1995 (*El Mercurio*, 1997). The pension debt estimates for the OECD countries are for rights accrued to date; the data sources are Van der Noord and Herd (1994) and, for public debt as a percentage of GDP, *Le Monde-Économie* (1999, p. 5).

[26] By construction, the value of d is higher the more aged the population and the lower the mortality level. The value of Aa is higher the more aged the population, since there are more people at ages that have accrued more years of contributions. Ar, however, may be higher or lower in more aged, lower mortality settings, since lower mortality implies higher life expectancy at most (or all) adult ages but a more aged population structure means that younger pensioners

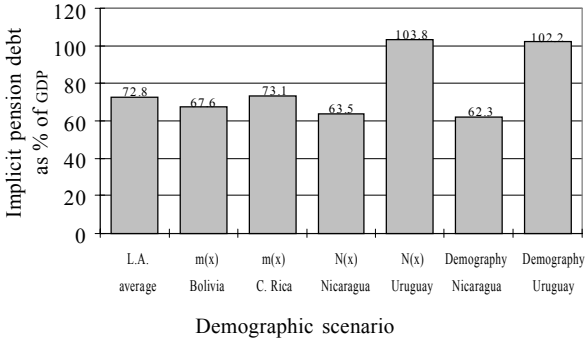
To illustrate the magnitude of the demographic effects we replaced the average values for the Latin American countries with extreme national ageing and mortality values. More specifically, we first constructed a "benchmark" vector of indicators, defined as the mean value of each of the intervening variables, and estimated a benchmark debt stock. Then the debt was recalculated using the highest and the lowest old-age mortality levels (those of Bolivia and Costa Rica, respectively) and the youngest and oldest national age structures (those of Nicaragua and Uruguay, respectively).

Figure 6 gives the results. They suggest that old-age mortality has a very small effect on the size of the debt: factoring in Bolivia's high mortality rate instead of the "average" pattern for Latin America yields a pension debt only a few percentage points lower. It hardly makes any difference if Costa Rica's low old-age mortality is used instead. This result is largely due to the fact that in the region old-age mortality does not vary as much in absolute terms (which is what matters for the pension debt) as general mortality does: in the early 1990s, life expectancy at birth was about 68.6 for Latin America, 76.3 in Costa Rica and 59.3 in Bolivia (a difference of about 17 years between the lowest and highest), while life expectancy at age 60 was about 18.9 for Latin America, 19.5 in Costa Rica and 15.2 in Bolivia, a spread of only 4.3 years. Also, old-age mortality only affects that part of the debt that is "owed" to pensioners, which is the smallest of the two components of total pension debt in almost all the Latin American countries.

The population age structure plays a much more substantial role: using Nicaragua's age distribution instead of that of Latin America as a whole yields a pension debt more than nine percentage points smaller, while if the more aged structure of Uruguay is used the debt goes up by more than 40 percentage points. A more realistic comparison is between the last two bars of figure 6, where the overall demographic configurations (age distribution and old-age mortality) of Nicaragua and Uruguay are contrasted, which gives a result almost identical to the previous one: a difference in the debt stock of about 40%.

FIGURE 6

Pension debt under different demographic conditions[a]



Source: Bravo and Uthoff (1999).

[a] *N(x)* stands for the population age distribution and *m(x)* for age-specific mortality.

It is important to note here that changes in other pension system and labour market factors have an even greater potential to affect the debt stock: if Nicaragua had Argentina's age structure its implicit debt would increase by more than 50%, but it would almost double if Nicaragua had Argentina's population coverage and more than quadruple if it had Argentina's social security tax rate (Uthoff and Bravo, 1998).

The potential demographic effect, however, is at least as big a factor in the debt as some macroeconomic/policy variables. One such variable is the discount rate used by governments to express past contributions and future benefits in common present values. For this discount rate to have an effect comparable to that of the population age structure, it would have to be more than 2% higher than the rate of wage growth.

When assessing medium-term fiscal obligations, it is useful to project the implicit debt to some future date (as was done for France, for example, by Vernière, 1997b). When this is done the corresponding estimate of the longitudinal ageing effect is quite robust since, although subject to some uncertainty, medium-term demographic changes are more predictable than, for example, interest rates or future economic growth. In particular, the fact that changes in the old-age dependency ratio up to 20 or 25 years ahead depend almost entirely on mortality patterns, which change only gradually over time, means that the projected trend can be regarded as fairly reliable.

(who have a greater life expectancy) account for a smaller proportion of the population. Therefore, the resultant value of *Ar*, as well as the final "demographic" effect on the stock of debt, depends on the particular combination of age structure and mortality at older ages in each country. As is shown in Bravo and Uthoff (1999), the positive ageing effect (which operates through *Aa* and *d*) tends to prevail over the ambiguous interaction between mortality at older ages and population ageing that operates through *Ar*.

V

The fiscal costs of transition

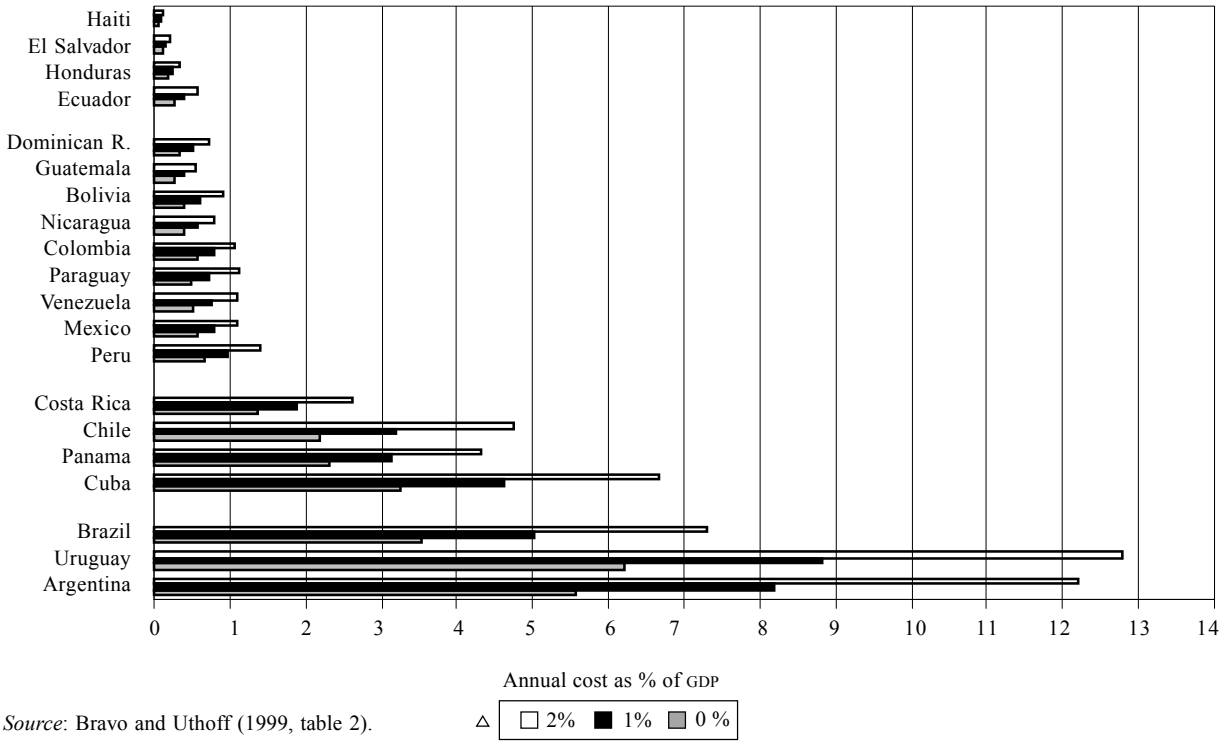
The extent to which the pension debt in any given country is "manageable" can be best appreciated by examining the annual fiscal outlay it entails. This fiscal cost depends on the size of the debt and also on other key macroeconomic and policy variables such as the GDP growth rate, the rate of interest paid on the public debt, the financing mechanisms used and other specific aspects of the reform.

Figure 7 illustrates the scale of the annual fiscal costs that would be involved were the whole implicit pension debt to be paid off over a period of 40 years (which is roughly the time it would take to complete the transition to the reformed pension system), given an annual GDP growth rate of around 4% and different assumptions regarding D, the difference between the discount rate (*i*) and the rate of wage growth (s).

This chart yields a similar reading to figure 6: the annual fiscal costs appear to be small to "manageable" (under 1.5% of GDP per year) in the countries in the "low" and "very low" debt groups; they are quite substantial –from 1.4% to 6.7% of GDP– in the "high" debt group (Chile, Costa Rica, Cuba and Panama); and they seem to be overly high for Argentina and Uruguay, as these two countries would need to make a financial effort equivalent to 6% to 13% of GDP (depending on assumptions) over a period of 40 years to pay off the full U-F transition costs. The estimates given are if anything conservative, as the supposed standard of dynamic efficiency in growth models implies an interest rate higher than total wage growth, so that *i* is substantially higher than the rate of wage growth. It should be noted that the fiscal costs (as a proportion of

FIGURE 7

Latin America: Annual fiscal cost of transition over 40 years, by different values of delta[a]



Source: Bravo and Uthoff (1999, table 2).

[a] Delta is the difference between the discount rate and the rate of wage growth.

GDP) do not vary significantly with the level of GDP growth. What matters most is the difference between this growth rate and the discount (or interest) rate: a discount rate 2% higher than GDP growth means that in many cases the fiscal costs are more than double what they would be in a situation where $i = \sigma$.

These figures, which are for the average over a 40 year period, give a useful idea of the scale of costs involved. In actual transitions the fiscal costs vary over time, depending on the arrangements made for payment of the pension debt and the financing mechanisms used.[27] In particular, extending the period over which the debt is paid (for example by setting periodic compensation as in Argentina and Bolivia, as opposed to the lump-sum "bond" used in Chile and Colombia) can achieve some reduction in the annual fiscal cost in situations where the discount rate (i) is greater than the economic growth rate (g). However, such reductions are not as dramatic as might be assumed: if i exceeded g by two percentage points, and the payment period were extended from 40 to 60 years (assuming this were feasible), the annual cost of repaying a debt of D = 100% of GDP would fall from 3.7% to 2.9% of GDP, and if it were extended to 80 years the annual cost would still be 2.5% a year.[28]

Bravo and Uthoff (1999) discuss the observed and projected trajectories of the transitional deficits of Argentina, Bolivia and Chile according to the above-mentioned model, noting the constraints these would place on the overall government budget and the risk of default on the entitlements accrued by workers and pensioners in the pension system. More detailed accounts of the cases of Brazil and Chile are given in Uthoff (1999) and Arenas (2000), respectively, showing how the timescale over which liabilities are amortized depends on the present and projected age and sex distribution of the active and retired population. In the simulations for Brazil, the most salient features are the greater relative importance of pensions being paid under the old system during the early stages of the transition and the subsequent predominance of the State guarantees for the non-contributory system and the "recognition bonds", the latter being provided to the relatively large working-age cohorts. In the case of Chile, perhaps the most significant features are the growing relative importance of women and the guaranteed minimum and "welfare" pensions over the medium to long term, which are likely to impose a large fiscal liability for pension funding well beyond the transition period.

Two final observations should be made regarding the practical policy-making process. Firstly, the level of debt and the payment schedule are not absolute givens, and countries can and have sought ways to make the fiscal costs more bearable (ECLAC, 1998 and Queisser, 1998). Many countries in Latin America have made only a partial switch to funding (this is the case with all the recent reforms, except those of Bolivia, Chile and Mexico), something that is particularly important for countries with mature, high-coverage pension systems and aged populations, such as Argentina and Uruguay. Changes to benefits and eligibility conditions, timed to coincide with the switch to funding, have also been made with a view to reducing fiscal obligations, and other stipulations have been introduced to the same end (Holzmann, 1997; ECLAC, 1998 and Mesa-Lago, 2000). Secondly, the overall macroeconomic and fiscal environment is crucial for a country's prospects of absorbing the transition costs. For example, implementation of the Chilean reform (which involves a complete switch) has been made possible by a very positive macroeconomic performance to date and by vigorous implementation of the necessary changes to the regulatory framework for the financial market (Arrau, 1994). Even so, it has required great fiscal discipline. All the reforming countries in the region have made efforts in these directions, with differing degrees of strain on their budgets and with different balances being struck between easing the fiscal burden and reducing the benefits provided to those in the system (Bravo and Uthoff, 1999 and Mesa-Lago, 2000).

[27] Two main financing mechanisms are (current) taxes and the issuance of new official public debt (i.e. future taxes). The financing mix affects both the amortization programme and the way the transitional costs are distributed between present and future generations of taxpayers. These intergenerational distribution effects are important, but will not be discussed here in any detail. See Arrau (1991), Schmidt-Hebbel (1995), Cifuentes (1995) and Valdés-Prieto, ed. (1997).

[28] After about 90 years, no further reductions would be obtained in the annual fiscal cost; the reductions diminish and the time after which no further reductions occur is shorter the larger the difference $i - g$ is.

VI

Summary and conclusions

After decades of declining demographic indices, the population of Latin America is beginning to age. Although the region is a long way from the situation of the world's most aged countries, it is forecast to age much more quickly than did the societies that are currently more advanced. These changes are going to take place in economic and institutional contexts where the living standards of more elderly generations will be much less protected than they are now in the more developed countries. Consequently, it is of the greatest importance for the countries in the region to begin assessing the different policy options available so that they can arrive at the decisions and programmes that are most appropriate to their demographic and economic conditions, now and in the near future.

It is often suggested that population ageing is a key underlying cause of the system's financial problems, but examination of the facts shows that this is generally not the case. This paper has demonstrated that population age structures and mortality patterns can have major effects on medium- to long-term developments in pension systems, but that, so far at least, labour market conditions and administrative problems have played a much more decisive role. In the vast majority of the region's countries the greatest effects of population ageing on pension systems still lie ahead, as was discussed in section III of this paper. That section examined trends in a number of pension system indicators relating to the ageing process, taking in the whole range from the younger age structures in Latin American countries today to the age distribution projected for France in the middle of the twenty-first century.

This paper has shown what might be the general trends in pension spending, financial balance, pension debt and the pension system rate of return if conditions in the system, the labour market and the economy remain unchanged. The analysis suggests that, if future ageing scenarios come about with system rules unchanged, the Latin American countries could see their expenditure, and perhaps their deficit levels, rising to meet those of the countries that are currently more advanced. It was seen, though, that it is very difficult to determine what pension liability levels are "sustainable" or "unsustainable", both in general and for particular countries, except in a few rather extreme cases. Rising expenditure, due in part to long-term population ageing, should not be regarded as a harbinger of imminent crisis or bankruptcy, insofar as it reflects a natural reallocation of resources within the life cycle owing to the increase in life expectancy among individuals and cohorts. The same is true in the case of pension liabilities, which naturally tend to be higher in countries with older populations and with maturer systems that have greater coverage. When systems have to be adapted, parametric changes to offset the effects of population ageing may often be enough. If not, reform options need to be evaluated in the light of the numerous possible permutations of public, private and mixed systems, benefit- or contribution-defined systems and funded or unfunded schemes.

The introduction of greater contribution and benefit funding is a type of reform that has been implemented in a number of Latin American countries and is being actively discussed in other regions as well. Sections IV and V of this paper raised and analysed some of the issues associated with this kind of reform. It was pointed out that, although funding is generally justified on the grounds of its potential to ease pressure on public budgets, improve labour market efficiency and the development of financial markets, raise saving, capital accumulation and growth rates and provide protection against population ageing and fluctuations in the age structure, the theory is not clear-cut as regards these issues.

The empirical data are not conclusive either, except for a few specific aspects. This paper examined one direct effect of switching to a funding system, the need to make the implicit pension debt explicit, and the fiscal costs that this entails. The model used considers the age structure of the population and shows the important role that this plays. It also shows the lesser effect of old-age mortality and the more substantial one of the system's population coverage, labour market factors and other system parameters such as contribution and replacement rates. Countries that are at an intermediate to more advanced stage of ageing and have systems with wide population coverage show high levels of pension debt, which is often greater than their official public debt and even than their annual GDP. For countries whose reforms envision full funding, this

translates into considerable fiscal transition costs over the 40 years or so that are required to complete the transition from one type of system to the other.

It was also noted that neither the size of the explicit debt nor the amortization schedule are absolute givens, since they can be, and indeed have been, adapted to suit different national situations. The fiscal costs depend on the strategies followed by governments as regards the degree of funding introduced and the way the implicit pension debt is made explicit. Countries have adopted different variants with a view to making the transition costs more bearable, although these sometimes have a negative effect on the welfare of system participants.

Among the different reform options currently being discussed, it is worth mentioning one that involves introducing contribution-defined mechanisms into unfunded systems. This method allows for ("notional") funding of contributions at a rate that matches growth in total wages, providing benefits that are actuarially fair between cohorts without the need to introduce funding. As with funding systems, in this scheme benefits adjust, to a large extent endogenously, to changes in the old-age survival rate and to population ageing. The fact that funding systems are almost always contribution-defined means they can be integrated more easily into the kind of system described. A system of this type is now being introduced in Brazil, and it could be a worthwhile option for other Latin American countries that are facing some of the demographic, political or fiscal constraints analysed here.

APPENDIX 1

The estimates in table A1 are based on the data given in *The cost of social security. Basic tables 1990-1993* (ILO, 1997). The figures for pension expenditure and revenue refer to public- and private-sector old-age, survivors' and invalidity pensions. The table excludes the expenditure rows for family allowances, unemployment benefits, employment injuries and funeral, sickness and maternity expenses. The "transfers to other schemes" column is also excluded. Generally speaking, the same rows were used for the income calculation, and the "transfers from other schemes" column was excluded.

Given below are the items included and excluded for each country considered.[a] References to sections and items in the ILO tables referred to have been kept, in case these should need to be consulted.

Country	*Expenditure*	*Income*
Argentina	1. Pensions 2. NC pensions	1. Pensions 2. NC pensions 3. Judiciary 4. Retention of wages 5. Own-account work
Bahamas	1. Old-age, survivors' and retirement	1. Old-age, survivors' and retirement
Barbados	1. OASI	1. Pensions (1 to 3 – Xs 2 and 3)
Belize	1. OASI (long term – funeral grant)	1. OASI (long term – funeral Xs)
Bolivia	1. OASI + 2. c, d, f	1. OASI + 2. c, d, f
Chile	1. OAS – TTOS	1. OAS – TFOS
Colombia	All – EI – SM – TTOS	All – EI – SM – TTOS
Costa Rica	2. OASI	2. OASI
Cuba	1. OASI	1. OASI
Dominica	1. OASI (long term – funeral grant)	1. OASI (long term – funeral grant Xs)
Ecuador	1. OASI – SM – EI – UN	1. OASI – SM – EI – UN
Grenada	1. OASI + 5. Public-sector employees	1. OASI + 5. Public-sector employees
Guatemala	1. OASI	1. OASI
Guyana	1.c OASI + 1.a.ii invalidity + 1.a.iii death + 2. Dependents' fund	1.c OASI + 1.a.ii invalidity + 1.a.iii death + 2. Dependents' fund
Jamaica	I. National insurance – maternity – funeral grant + III. Public-sector employees	I. National insurance – maternity – funeral grant + III. Public-sector employees
Nicaragua	1. OASI	1. OASI
Panama	1. OASI + 2. Public-sector employees + 4. Administration	1. OASI + 2. Public-sector employees + 4. Administration
Trinidad and Tobago	1. OASI + 2. NC old-age pension	1. National insurance – funeral grant and SM Xs

[a] The abbreviations used are as follows:

EI = employment injuries
NC = Non-contributory
OAS = Old-age and survivors'
OASI = Old-age, survivors' and invalidity
SM = Sickness and maternity
TFOS = Transfers from other schemes
TTOS = Transfers to other schemes
UN = Unemployment
Xs = Expenditure

TABLE A.1

Data and estimates of Social Security expenditures and financial balance, based on ILO (1997) The Cost of Social Security, 1990-1993

				A. Basic estimate, including State contribution *Data in % of GDP*						B. Estimate excluding State contribution *Data in % of GDP*			
				Expenditure		Revenue		Balance		Revenue		Balance	
Country	Proportion 60+ (1990)	Dependency ratio (1990)	Year	Pensions	Total	Pensions	Total	Pensions	Total	Pensions	Total	Pensions	Total
Barbados	0.15	0.30	1992	2.48	5.23	3.86	8.21	1.38	2.98	3.86	8.21	1.38	2.98
Argentina	0.13	0.27	1992	4.41	4.78	4.71	5.28	0.30	0.50	4.52	5.09	0.11	0.31
Dominica	0.12	0.23	1993	1.42	2.66	2.78	4.51	1.36	1.85	2.70	4.51	1.28	1.85
Jamaica	0.09	0.21	1991	0.66	1.05	1.39	1.72	0.73	0.67	1.39	1.72	0.73	0.67
Cuba	0.12	0.21	1991	8.40	18.00	8.40	18.00	0.00	0.00	4.85	6.50	-3.55	-11.50
Grenada	0.09	0.21	1993	2.23	2.66	4.14	4.83	1.91	2.17	4.14	4.83	1.91	2.17
Chile*	0.09	0.18	1993	6.89	22.67	8.91	34.15	2.02	11.48	3.91	16.25	-2.98	-6.42
Trini&Toba	0.08	0.17	1991	0.64	0.95	1.50	1.54	0.86	0.59	1.50	1.54	0.86	0.59
Panama	0.07	0.16	1990	5.76	9.31	6.01	10.43	0.25	1.12	5.66	10.08	-0.10	0.77
Belize	0.06	0.16	1992	0.24	1.14	1.38	2.65	1.14	1.51	1.38	2.65	1.14	1.51
Ecuador	0.06	0.14	1991	1.85	1.95	2.39	2.93	0.54	0.98	2.13	2.67	0.28	0.72
Bolivia	0.06	0.14	1992	1.72	1.83	2.01	2.23	0.29	0.40	1.94	2.16	0.22	0.33
Colombia	0.06	0.13	1992	3.26	4.36	3.92	5.18	0.66	0.82	3.88	5.14	0.62	0.78
Costa Rica	0.06	0.13	1993	1.92	7.65	2.26	8.91	0.34	1.26	2.19	8.08	0.27	0.43
Bahamas	0.07	0.13	1992	1.72	2.32	2.80	3.43	1.08	1.11	2.67	3.30	0.95	0.98
Guatemala	0.05	0.13	1993	0.28	1.05	0.49	1.35	0.21	0.30	0.49	1.35	0.21	0.30
Guyana	0.06	0.13	1992	1.05	1.52	1.77	2.26	0.72	0.74	1.77	2.26	0.72	0.74
Nicaragua	0.04	0.11	1992	0.22	0.50	0.22	0.53	0.00	0.03	0.21	0.47	-0.01	-0.03
Average	*0.08*	*0.17*		*2.51*	*4.98*	*3.27*	*6.56*	*0.77*	*1.58*	*2.73*	*4.82*	*0.22*	*-0.16*

Source: Author's estimates, based on ILO (1997) The Cost of Social Security 1990-1993, Basic Tables. Demographic indicators are based on CELADE (1999) population estimates.

* "Income from capital" was excluded in both the A and B estimates, for comparability with the other countries that had not started their funded pillars by 1990-1993.

APPENDIX 2

Model equations

The following set of equations are used in the paper to study the relationship between a standard ageing index in the analysis of pension systems, the old age dependency ratio (d), i.e., the ratio of the retirement-age to the working-age population, and selected pension system indicators. The equations are based on the assumption that the contribution rate (c), the replacement rate (r) and the ratio of covered workers to the waged work force (k) stay constant over time in the country of interest. Assuming additionally that pensions are calculated as a proportion of real wages, it follows that:

1. Pension system *expenditure* (E), expressed as a fraction of annual GDP (Y) is:

$$E = r \cdot s \cdot k \cdot d \tag{1}$$

where s is the share of the wage mass in GDP.

2. Since system revenue from contributions is $C = c \cdot s \cdot k$, the system's financial balance (C-E), expressed as a ratio to GDP is:

$$Fi = s \cdot k \cdot (c - rd) \tag{2}$$

and the balance as a fraction of revenue is:

$$F_{ii} = 1 - \left(\frac{r}{c}\right) d \tag{3}$$

3. The *implicit pension debt* (see Bravo and Uthoff, 1999) is given by:

$$D = sk(cA_a + rdA_r) \tag{4}$$

where A_a is the discounted average number of years of contribution by the economically active at a given moment in time, and A_r is the discounted average expected lifetime of all those in retirement ages at the given moment in time.

4. The pension system's *implicit rate of return* (ρ), when the system rules are fixed throughout the cohort's adult lifetime (Bravo, 1996, p. 126), can be written as:

$$\rho_i = \frac{1}{(A_R - A_W)}\left[\ln\left(\frac{r}{c}\right) + \ln\left(\frac{LR}{LW}\right)\right] + \sigma \tag{5}$$

where A_R is the mean age at retirement, A_W the mean working age, LR is the average number of years lived in retirement, LW the number of working years lived by the individual or cohort of interest, and σ is the growth rate of wages. When the financial equilibrium rule holds (Bravo, 1996, p. 127), then

$$\rho_i = \frac{\ln\left(\frac{LR}{LW}\right) - \ln(d)}{(A_R - A_W)} + \sigma \tag{6}$$

Bibliography

Arenas, A. (2000): *El sistema de pensiones en Chile: resultados y desafíos pendientes*, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).

Arrau, P. (1991): La reforma previsional chilena y su financiamiento durante la transición, *Colección estudios CIEPLAN*, No. 32, Santiago, Chile, Economic Research Corporation for Latin America (CIEPLAN).

_____ (1994): *Fondo de pensiones y desarrollo del mercado de capitales en Chile: 1980-1993*, Financiamiento del desarrollo series, No. 19, Santiago, Chile, ECLAC.

Auerbach, A. and J. Kotlikoff (1987): *Dynamic Fiscal Policy*, Cambridge, Massachusetts, Cambridge University Press.

Baldacci, E. and D. Tuzi (1999): Effects of labour market changes on the sustainability of the Italian pension system, *Âge, génération et activité: Vers un nouveau contrat social? Proceedings of the 1ères Rencontres Sauvy*, Paris, National Institute of Demographic Studies, December.

Blanchet, D. (1990): Retraites par capitalisation et par répartition selon le contexte démographique: quelques résultats comparatifs, *Annales d'économie et de statistique*, No. 18,

_____ (1998): Le débat repartition-capitalisation: un état des lieux, *Retraites et épargne*, Paris, Conseil d'Analyse Économique.

Bravo, J. (1992): Visiones teóricas de la transición de la fecundidad en América Latina. ¿Qué relevancia tiene un enfoque difusionista?, *Notas de población*, year 20, No. 56, Santiago, Chile, Latin American Demographic Centre (CELADE).

_____ (1996): La tasa de retorno de los sistemas de pensiones de reparto, *Estudios de economía*, vol. 23, No. 1, Santiago, Chile, University of Chile, Faculty of Economics and Management Sciences, Department of Economics, June.

_____ (1999): Envejecimiento de la población y responsabilidades fiscales hacia los sistemas de pensiones en América Latina, Seminario Responsabilidades Fiscales en Sistemas de Previsión, Santiago, Chile, ECLAC, 2-3 September.

Bravo, J. and A. Uthoff (1999): *Transitional Fiscal Costs and Demographic Factors in Shifting from Unfunded to Funded Pensions in Latin America*, Financiamiento del desarrollo series, No. 88, Santiago, Chile, ECLAC.

Brazil, Government (1998): Custos de transição para um sistema de capitalização individual, *Informe de Previdência Social*, vol. 10, No. 2, Brasilia, February.

Calot, G. and J.C. Chesnais (1997): Le vieillissement démographique dans l'Union européenne à l'horizon 2050: une étude d'impact, *Travaux et recherches de prospective*, No. 6, Paris, Commissariat Général du Plan, October.

Chackiel, J. (2000): El envejecimiento de la población latinoamericana, *Encuentro latinoamericano y caribeño*

sobre las personas de edad, Santiago, Chile, ECLAC, August.

Chand, S. and A. Jaeger (1996): *Ageing Populations and Public Pension Schemes*, Occasional Paper, No. 147, Washington, D.C., International Monetary Fund (IMF).

Chauveau, T. and R. Loufir (1995): L'avenir des régimes publics de retraite dans les pays du G7, *Revue de l'OFCE*, No. 52, Paris, Observatoire Français des Conjonctures Économiques (OFCE), January.

Cifuentes, R. (1995): Reforma de los sistemas previsionales: aspectos macroeconómicos, *Cuadernos de economía*, year 32, No. 96, Santiago, Chile, Catholic University of Chile.

Conseil d'Analyse Économique (1998): *Retraites et épargne*, Paris, La Documentation Française.

Conte-Grand, A. (1995): *Reparto o capitalización-gestión pública o privada: aporte para las discusiones en materia de seguridad social*, Working document, No. 24, Santiago, Chile, International Labour Organization (ILO).

Cosio-Zavala, M. (1996): The demographic transition in Latin America and Europe, J.M. Guzmán and others (eds.), *The Fertility Transition in Latin America*, Oxford, U.K., Clarendon Press.

Cox, A. (1999): Pensions projections for Chilean men and women: Estimates from social security contributions, *World Bank Research Project on Gender and Social Security*, Washington, D.C., World Bank.

Dinh, Q. (1995): *Projection de population totale pour la France Metropolitaine, base RP90, horizons 1990-2050*, Paris, National Institute of Statistics and Economic Studies.

Dumont, J.P. (1998): *Les systèmes de protection sociale en Europe*, Paris, Fédération Mutualiste Parisienne (FMP), Mutualité Francilienne.

ECLAC (1998): *The Fiscal Covenant. Strengths, weaknesses, challenges*, LC/G.2024, Santiago, Chile, April.

ECLAC/CELADE (1996): *Impacto de las tendencias demográficas sobre los sectores sociales en América Latina: contribución al diseño de políticas y programas*, E-CELADE series, No. 45, Santiago, Chile.

_____ (1998): Latin America: population projections, 1970-2050, *Demographic Bulletin*, year 31, No. 62, Santiago, Chile.

_____ (1999): Latin America: Economically active population 1980-2025, *Demographic Bulletin*, No. 64, Santiago, Chile.

El Mercurio (1997): Pulso latinoamericano, Santiago, Chile, 27 March.

Franco, D. (1995): *Pension Liabilities: Their Use and Misuse in the Assessment of Fiscal Policies*, Economic Papers, No. 110, Brussels, Luxembourg, European Commission, May.

Gokhale, J. (1995): Demographic changes, generational accounts and national saving in the United States, paper presented at the Conference on Intergenerational Economic Relations and Demographic Change, Honolulu, Hawaii, International Union for the Scientific Study of Population (IUSSP)/East-West Center (EWC), September.

Guzmán, J.M. (1996): Social change and fertility decline in Latin America, J.M. Guzmán and others (eds.), *The Fertility Transition in Latin America*, Oxford, U.K., Clarendon Press.

Holzmann, R. (1997a): *On Economic Benefits and Fiscal Requirements of Moving from Unfunded to Funded Pensions*, Financiamiento del desarrollo series, No. 48, Santiago, Chile, ECLAC.

_____ (1999): Comments to "Rethinking pension reform: Ten myths about social security", by P. Orszag and J. Stiglitz, paper presented at the Conference on New Ideas about Old Age Security, Washington, D.C., World Bank, September.

ILO (1997): The cost of social security, *Basic Tables 1990-1993,* http:/www-ilo-mirror.who.or.jp/public/english/110secso/css/.

Kinsella, K. and Y. Gist (1995): *Older Workers, Retirement and Pensions: A Comparative International Chartbook*, Washington, D.C., U.S. Department of Commerce, Bureau of the Census/U.S. Department of Health and Human Services, National Institute on Ageing.

Le Monde-Économie (1999): Paris, 19 January.

Lee, R. (1995): A Trans-cultural perspective of intergenerational transfers, paper presented at the Conference on Intergenerational Economic Relations and Demographic Change, Honolulu, Hawaii, IUSSP/EWC, September.

Leibfritz, W. and D. Roseveare (1995): Ageing populations and government budgets, *The OECD Observer*, No. 197, Paris, Organisation for Economic Co-operation and Development (OECD).

Mesa-Lago, C. (1985): *Social Security in Latin America*, Cuadernos de la CEPAL series, No. 85, Santiago, Chile, ECLAC.

_____ (1991): *Social Security and Prospects for Equity in Latin America*, World Bank discussion papers, No. 140, Washington, D.C., World Bank.

_____ (1994): *La reforma de la seguridad social y las pensiones en América Latina: importancia y evaluación de las alternativas de privatización*, Reformas de política pública series, No. 28, Santiago, Chile, ECLAC.

_____ (2000): *Estudio comparativo de los costos fiscales en la transición de ocho reformas de pensiones en América Latina*, Financiamiento del desarrollo series, No. 93, Santiago, Chile, ECLAC.

Meslé, F. and J. Vallin (1998): *Tables de mortalité du moment 1806-2100: sexe féminin, sexe masculin, sexes réunis*, Paris, National Institute of Demographic Studies.

Orszag, P. and J. Stiglitz (1999): Rethinking pension reform: Ten myths about social security, paper presented at the Conference on New Ideas about Old Age Security, Washington, D.C., World Bank, 14-15 September.

Pinheiro, V. and S. Vieira (2000): *Reforma previsional en Brasil. La nueva regla para el cálculo de los beneficios*, Financiamiento del desarrollo series, No. 97, Santiago, Chile, ECLAC.

Queisser, M. (1998): *The second-generation pension reforms in Latin America*, OECD working paper, Paris, OECD.

Reynaud, E. (coord.) (1998): *Les retraites dans l'Union européenne: adaptation aux évolutions économiques et sociales*, Paris, L'Hartman.

Rofman, R. (1997): Modelling transition costs in social security reforms, paper presented at the International

Population Conference, Beijing 1997, session I.29: Intergenerational Transfers and Population Ageing, Belgium, IUSSP.

Roseveare, D. and others (1996): *Ageing Populations, Pension Systems and Government Budgets: Simulations for 20 OECD Countries*, OECD Economics Department working papers, No. 168, Paris, OECD.

Sauvy. A. (1953): *L'Europe et sa population*, Paris, National Institute of Demographic Studies.

Schmidt-Hebbel, K. (1995): *La reforma pensional colombiana: efectos fiscales y macroeconómicos*, Bogotá, Bogotá, Stock Exchange.

_____ (1997): *Pension Reform, Informal Markets and Long-Term Income and Welfare*, Working document, No. 4, Santiago, Chile, Central Bank of Chile.

Thompson, L. (1999): Pension reform in industrialized countries, paper presented at the Latin American and Caribbean Symposium on Older Persons, Santiago, Chile, ECLAC, 8-10 September.

Thogersen, O. (1998): A note on intergenerational risk sharing and the design of pay-as-you-go pension programs, *Population Economics*, vol. 11, No. 3, Berlin, Springer-Verlag.

United Nations (1998): *World Population Prospects: the 1996 Revision*, New York, Department of Economic and Social Affairs.

_____ (1999): *World Population Prospects: the 1998 Revision. Sex and Age*, New York, Department of Economic and Social Affairs.

Uthoff, A. (1997): Pension system reforms, the capital market and saving, *CEPAL Review*, No. 63, LC/G.1986-P, Santiago, Chile, ECLAC

_____ (1999): Perfil de responsabilidades fiscales de una eventual sustitución hacia un sistema de capitalización individual en Brasil, paper presented at the Responsabilidades Fiscales en Sistemas de Previsión Seminar, Santiago, Chile, ECLAC, 2-3 September.

Uthoff, A. and J. Bravo (1998): Deuda previsional y privatización de los sistemas de pensiones, *X Seminario Regional de Política Fiscal: Compilación de Documentos*, Santiago, Chile, ECLAC, 26-28 January.

Valdés-Prieto, S. (ed.) (1997): *The Economics of Pensions: Principles, Policies and International Experience*, London, Cambridge University Press.

Valdés-Prieto, S. (1999): *El tamaño de las comisiones de las AFP: comparación internacional*, Santiago, Chile, Catholic University of Chile.

Van der Noord and Herd (1993): *Pension Liabilities in Seven Major Economies*, Working paper, No. 142, Paris, OECD.

_____ (1994): Estimating pension liabilities: A methodological framework, *OECD Economic Studies*, No. 23, Paris, OECD.

Vernière, L. (1997a): La mesure et l'interpretation de l'équivalent patrimonial des droits à la retraite, *Questions retraite*, No. 4, Paris, Caisse de Dépots et Consignations, Branche Retraites..

_____ (1997b): Une évaluation de l'équivalent patrimonial des droits détenu par les retraités en France, *Questions retraite*, Nº 5, Paris, Caisse de Dépôts et Consignations, Branche Retraites.

Villa, M. and L. Rivadeneira (2000): El proceso de envejecimiento de la población en América Latina y el Caribe: una expresión de la transición demográfica, *Encuentro Latinoamericano y Caribeño sobre las Personas de Edad*, Santiago, Chile, ECLAC, August.

World Bank (1994): *Averting the Old Age Crisis. Policy Research Report*, Oxford, U.K., Oxford University Press.

Expert opinion *as an instrument* for assessing investment *in primary education*

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Most educational investment is based on untested or partially tested assumptions about the cost-effectiveness of a given course of action. Indeed, the only estimates that have been available have been for the average profitability of each type of education, even though these differ greatly from marginal profitability. This article sets out a new approach to estimating the cost-effectiveness of educational investment. The authors canvassed the views of ten world-renowned educational researchers on the likely impact on students' learning achievements of a set of forty measures generally regarded as desirable for improving primary education, and supplemented the responses received with their own calculations of the cost of each, the aim being to establish an index of cost-effectiveness. On this basis, they concluded that the educational projects implemented in the region have failed to include many of the measures identified as the most efficient, and this has limited the quality of the education provided and its potential contribution to economic success, despite the considerable increase in educational investment by governments and international bodies in the 1990s. The article concludes with a number of recommendations aimed at remedying this situation, which take account simultaneously of the impact and the cost of the different educational measures.

I

The low quality of education in Latin America

In Latin America, working out the most efficient way of using the limited resources available to schools is critical. The quality of education in the Latin American region is much lower than in the countries it competes with, in terms both of quantity (school completion rates and the average educational level of the workforce) and the degree to which knowledge and learning are made use of (OECD, 2000 and UNESCO, 2000). Recently, the UNESCO/OREALC Laboratorio Latinoamericano de Evaluación de la Calidad de la Educación (Latin American Education Quality Assessment Laboratory) has published comparative information on learning in the third and fourth grades of primary education in the region. Table 1 shows the scores obtained by eleven Latin American countries in the mathematics section of a regional test set by UNESCO, which measures much simpler and less sophisticated skills than the tests used in the industrialized countries. It can be seen that, other than in Cuba, performance is inadequate.

The results of the test also show that performance is worse in rural areas than in urban ones (except in Colombia), that capital cities do better than smaller ones and that private schools (except in the Dominican Republic) achieve better results than State ones.

The results for the Spanish test are similar. Pupils from the half of the population with below-average incomes get around 40% of the questions right. As the tests give four multiple-choice alternatives, pupils who know the right answers to 20% of the questions will also give "correct" (but random) answers to one in four of the other 80 questions to which they do not know the answers, giving a total of a 40% success rate in answering the questions. This means that most pupils do not understand the contents of the written texts presented to them in this test. In other words, the great majority of future workers are functionally illiterate.

The poor results obtained make it necessary to carry out a careful examination of the critical factors generally considered to determine the level of learning and retention. Among these, mention is often made of the availability and use of text books, the provision of pre-school education, teaching by radio and some in-service training programmes (Lockheed and Verspoor, 1991), even though the effects of these have rarely been calculated and have never been correlated with their costs. Up to 1998, few of the experiments carried out at the primary education level in Latin America had been properly evaluated and publicized. Of experiments where this was done, mention may be made of: mathematics by radio in Nicaragua (Jamison, Searle, Heyneman and Galda, 1981), educational television in El Salvador (Hornik, Ingle, Macanany and Schramm, 1973), North-East Education Programme in Brazil (Harbison and Hanushek, 1992), Escuela Nueva in Colombia (McEwan, 1995; Psacharopoulos, Rojas and Vélez, 1995 and Rojas and Castillo, 1998), P-900 in Chile (Gutman, 1993), Escuelas Fe y Alegría (Swope and Latorre, 1998), EDUCO in El Salvador (El Salvador, Ministry of Education, 1996) and fast-track primary

TABLE 1
Latin America (11 countries): Average scores in the UNESCO regional test for fourth grade mathematics[a]

Country	Score
Cuba	353
Argentina	269
Brazil	269
Chile	265
Colombia	258
Mexico	256
Paraguay	248
Bolivia	245
Dominican Republic	234
Venezuela	231
Honduras	226

Source: UNESCO, 1998.

[a] Standardized average scores of 250 for third and fourth grades and standard deviation of 50. The average pupil in the region got approximately 50% of the questions right; the average Cuban student got 85% right.

☐ Readers wishing to apply the methodology described in this document should apply to the authors for permission at one of the following e-mail addresses: Larryw@iadb.org or eschief@ust.cl.

schools in Brazil (Araujo Oliveira, 1998). Over time, the increase in the number of national programmes for measuring educational attainments will make it possible to determine which measures have had a significant effect on learning.[1]

The scantiness of the information available on the factors that influence the results of learning,[2] despite the importance of the issue, and the difficulties involved in traditional research into efficiency, led the authors to seek a different strategy to help professional educators and researchers gain a better understanding of the fundamental aspects of the subject and to develop an instrument that may facilitate training, consensus-building and the identification of critical areas of research.

II

Forty strategies commonly used to improve education quality in Latin America

To obtain comparable responses from the panel of ten international experts whose opinion was sought, all of whom are active in universities and international organizations, the authors designed an index of cost-effectiveness (efficiency) which included a precise definition of each of the possible measures whose impact and feasibility they were being asked to assess, the idea being to reduce variations resulting from differences in the "assumed" scope of each of these measures. Those interviewed had to estimate the impact that each of the 40 primary education measures deemed possible (box 1) might have on learning attainments (as measured by scores in a standardized test to be administered at the end of the sixth grade), then estimate the percentage probability of successful implementation. The authors then brought in their own calculations of the unit cost of the 40 measures. These three pieces of information were used to calculate the cost-effectiveness index value of each.

The 40 measures submitted to the experts, which relate to the twelve operational areas of the education system given in table 2, were selected on the basis of seven different types of criterion:

i) the components of educational programmes and projects applied in Latin America over the last 20 years, successfully or otherwise;
ii) the priorities and recommendations put forward by international bodies and development banks (Lockheed and Verspoor, 1991; World Bank, 1994 and Carnoy and de Moura Castro, 1997);
iii) the main conclusions drawn from the regional diagnostic surveys carried out in the 1990s (Schiefelbein, coord., 1998 and Wolff, Schiefelbein and Valenzuela, 1994);
iv) analysis of existing research studies into the cost-effectiveness of key strategies (Wolff, Schiefelbein

[1] See Rojas and Esquivel (1998) for a detailed summary of recent experience.

[2] Besides the studies referred to, other worthwhile efforts have been made in this direction. The sectoral studies of Honduras and El Salvador on failure at school and the repeating of years (Reimers and McGinn, 1997) have resulted in the implementation of a range of programmes designed to reduce the repetition rate. However, the few systematic research initiatives that have been undertaken, particularly those dealing with impact on learning, are riddled with uncertainties and inconsistencies. In the case of the decentralization programme implemented in El Salvador through the EDUCO programme, it has been ascertained that enrolment levels in rural schools have increased and learning attainments and retention rates have improved, but few clear differences can be discerned between the level of learning in EDUCO schools and that in traditional Salvadoran schools. EDUCO schools are better equipped, devote more time to teaching and have greater parent involvement. It is possible, though, that the improvement in learning attainments may be the result of the higher expectations accompanying decentralization, which has indeed included a more learning-oriented approach (Meza, 1997). It is also observed that decentralized schools in Nicaragua show higher retention rates, although other factors may be influencing this finding. Satisfaction levels among teachers and parents are found to be higher, although here again the educational results are not clear (Castillo, 1998). In fact, although there are solid political and social reasons for supporting the adoption of a decentralized system –in particular, the role of such a system in strengthening civil society– there is little evidence worldwide to show that decentralization is accompanied by an increase in learning.

Box 1

FORTY POSSIBLE EDUCATIONAL MEASURES FOR LATIN AMERICA

1. Enforce a policy of not switching classroom teachers during school year.
2. Implement a policy of assigning best teachers to first grade.
3. Enforce regulations on official length of school year.
4. Extend daily schedule by one hour (40 minutes academic classes, 20 minutes recreational) and pay teachers additional salary in proportion.
5. Extend length of school year by one week and pay teachers additional salary in proportion.
6. Pay teachers in rural schools salary increment of 50% to have better trained teachers and raise the percentage of certified teachers.
7. Raise teachers' salaries by 10% in real terms, with no-strike agreement for two years.
8. Raise teachers' salaries by 20% in real terms, with no-strike agreement for three years.
9. Fire half the staff in the education bureaucracy (currently 5% of unit costs) and establish a new highly trained and motivated bureaucracy paid on average 2.1 times previous salary.
10. Establish management information system (MIS) for identifying low-performing schools and inform school supervisors.
11. Decentralization: give authority to school principals to manage funds and to hire and fire teachers with local council approval, with no improvement in the capacity of the ministry of education for assessment and oversight.
12. Same as above, except the ministry's capacity for assessment and oversight is improved significantly.
13. Test a 10% sample of fourth graders in mathematics and reading and provide numerical results to all fourth grade classroom teachers.
14. Test the same sample, analyse results in terms of remedial strategies, and organize local follow-up seminars for fourth grade teachers (one week).
15. Universal testing of fourth graders (same as above).
16. Provide classrooms with one standard textbook per student in mathematics as well as in reading (200 pages each) and accompanying teacher guide, without training teachers to use them.
17. Provide same as above and also train teachers to use them (one week per year).
18. Produce and provide to each student a set of learning materials for individualized instruction in reading and mathematics (400 pages per student, replaced every three years).
19. Provide small library (100 books) for each classroom (renew every five years).
20. School feeding programmes: free snack (cup of milk and bread) for everyone.
21. School feeding programmes: free snack (cup of milk and bread) provided for half the children, the rest pay.
22. School feeding programmes: free lunch for everyone.
23. School feeding programmes: free lunch for half the children, the rest pay.
24. Yearly check-up and referral by doctor. Not including medical treatment provided by the health system.
25. Eyesight test by school and referral. Not including treatment.
26. Adapt and broadcast high-quality pre-school television programmes such as Sesame Street (250 programmes). For home viewing only.
27. Media campaigns for parents to provide early stimulation to children ("Did you read one page last night to your children?"), 30 one-minute spots in one week.
28. One year of development-oriented pre-schooling for at-risk children (50%), at unit cost equal to one year of primary school.
29. Same as above at unit cost 0.5 times primary.
30. One year of caretaking of pre-schoolers with no educational development content (unit cost 0.5 of primary school).
31. Provide general in-service training for teachers (upgrading), four weeks per year (without follow-up materials for students).
32. Targeted in-service hands-on training focusing on developing classroom strategies for cooperative learning (group work) and students' active use of time (one week per year).
33. Targeted training focusing on using programmed learning materials (one week).
34. Targeted training acquainting teachers with modern curriculum objectives and strategies (one week, as in Venezuela's CENAMEC programme).
35. Establish a government grant programme to improve the quality of pre-service training to meet the challenges of the twenty-first century. Government provides US$ 50 extra for every teacher trainee to teacher training institutions revising their programmes to emphasize active learning, high standards, commitment and responsibility.
36. Revise curriculum in mathematics and reading using local experts and send a copy to each teacher (without in-service teacher training and without field study of implemented curriculum).
37. Prepare and implement bilingual education curriculum, including materials, training and selection of teachers, in reading and mathematics, first and second grade, as well as adaptation and translation of textbooks.
38. Prepare and implement interactive radio instruction programme for mathematics and Spanish and broadcast by radio to all school children with accompanying teaching/learning materials.
39. Provide one hour per week of computer access to all primary school children at which time they study LOGO.
40. Establish a national consensus on the importance of improving basic education. Then deliver a complete learning package to schools at risk (50% lowest-performing schools): self-learning materials, training in active and cooperative learning, hands-on workshops, community involvement, school-based management, formative evaluation and systematic testing and feedback.

TABLE 2
Educational measures by operational area

Operational area	Measure number[a]
Time on task	3,4,5
Academic management	1,2
Salaries	6,7,8
Management and decentralization	9,10,11,12
Testing	13,14,15
Textbooks and self-learning materials	16,17,18,19
Food and health	20,21,22,23,24,25
Initial education	26,27,28,29,30
Teacher training	31,32,33,34,35
Curriculum	36,37
Radio and computers	38,39
Package of measures	40

[a] The numbers of the measures are those assigned to them in table 1, where they are described in detail.

and Valenzuela, 1994; Lockheed and Verspoor, 1991 and Verspoor, 1989);

v) research into factors affecting performance (Fuller and Clarke, 1994);

vi) the results of the reform implemented in California (Chrispeels, 1997) and

vii) the suitability of this information for expression in simple, precise terms so that estimates could be reliably compared.

The measures identified included the five "promising policy measures" selected by Lockheed and Verspoor (1991, p. 28): teaching time, text books and teaching materials, measures to increase pupils' learning capacity (nutrition, health and initial education), teacher training and the curriculum. Also included were some measures that are prevalent in the region, even though there was evidence that they were ineffective. A preliminary version of these 40 strategies was reviewed with top officials from the countries participating in three planning courses organized by UNESCO in 1994 and 1996. By means of this process, the forty measures described in box 1 were eventually arrived at.

The public tend to believe (and pedagogical thinking tends to support them) that combinations of measures can have a cumulative effect, which is why a number of strategies combine two or more measures. For example, as well as measure 11 (decentralization giving greater authority to school principals) measure 12 is included (as above, but with greater inspection powers for the ministry), and measure 16 (provide two books to every pupil) is supplemented by 17 (as above, plus a week of teacher training).

III

The country, "Concordia", where the strategies would be applied

In order to produce valid comparisons, a target country was devised: "Concordia". This prototype country, which is described in box 2, was constructed on the basis of average values observed in Latin America, including demographic characteristics, cost levels, pupil-teacher ratio, school equipment and test scores. Consequently, all the responses (from the world experts and planners) are linked to a common educational context.

It was necessary to have this "artificial construct" without history or context because cost-effectiveness will vary significantly depending on the number of students enrolled in each country's education system, its degree of educational development and its gross domestic product per inhabitant. For example, relative equipment costs may be considerably higher in a country where the average unit cost of primary education is US$ 100 or less, as compared with a regional average of US$ 200. The same would be true in smaller countries where fixed costs are high and variable costs low (for example, sample-based assessments and distance learning).

Box 2
CONCORDIA

- Population: 20 million
  Rural population: 30%
  Indigenous population: 10%
- Primary education completion rate (six years): 60%
- Student-teacher ratio: 29:1
- Unit cost of primary education: US$ 200
- Number of children in primary schooling (grades 1 to 6): 2 million
- Total cost of primary education system: US$ 400 million
- Percentage of budget going on teachers' salaries: 90%
- Hours of schooling: four a day, 27 class periods of 45 minutes each per week
- 50% of children have (or use) basic textbooks
- There is no assessment system in place. However, a small sample of pupils were tested at the end of sixth grade. The test was based on the official mathematics and Spanish language curricula. The average test score was 50 out of 100. This score would indicate that a student had mastered what the official curriculum expected him or her to know.

IV

Characteristics of the panel of world experts

The authors selected experts who met six criteria: i) they had published articles in good professional reviews, ii) they had been cited repeatedly by education planners and professionals, iii) they had easy access to the results of recent research, iv) they had participated in projects in a variety of Latin American countries, v) they were leaders in the analysis of educational development initiatives and vi) they had experience of working with multilateral development bodies in the region. In addition, a balance was sought between the number of experts from North America and Latin America.

The names of the world experts on the panel and the institutions they work in obviate any need for further comment regarding the weight of their opinions: Martin Carnoy and Henry Levin (University of Stanford), Noel McGinn and Fernando Reimers (University of Harvard), Claudio de Moura Castro (Inter-American Development Bank), Steve Heyneman, Himelda Martínez and Eduardo Vélez (World Bank), Jeffrey Puryear (Inter-American Dialogue) and Juan Carlos Tedesco (Geneva International Bureau of Education, UNESCO). The authors would like to take this opportunity to express their heartfelt gratitude to the panel that supported this study.

The response of the experts was enthusiastic, owing to their deep interest in the issues raised (only the two European representatives in the original sample could not respond to the survey). No systematic differences were noticed in the estimates submitted by the experts from the two regions referred to above.

V

The indicator of pupils' academic performance

The dependent variable selected was the "score obtained by the pupil in a standardized test taken at the end of the sixth grade". It was assumed that this test would be similar to the language and mathematics tests given by UNESCO/OREALC in 13 countries in 1997, in which the average pupil answered 50% of the questions correctly (table 1). The questions in these tests embodied a consensus opinion among the participant countries as to what would be expected of a common curriculum. In this case, the tests dealing with criteria anticipate a

100% correct response rate, since that is what the curriculum requires. Consequently, with the help of the appropriate action (strategy), it is feasible that a certain number of students may obtain higher results, as was shown by the case of Cuba.

This approach is not without its problems. Many children leave school before reaching the sixth grade or repeat a year, particularly in the poorer countries. If the variable selected had been the "percentage of children completing sixth grade", the estimates arrived at by the experts would have changed, although not significantly. For example, school meals would have had a much greater impact on pupil retention than on learning, as they are assumed to be an incentive to attend school.

Using test scores as a dependent variable is more suitable for those education systems where large proportions of students complete primary education (Costa Rica or Argentina), but is much less so in the case of primary education systems that have a high drop-out rate (Honduras or Guatemala).

In any event, almost all the region's education systems are progressing rapidly towards the goal of six years of schooling and, consequently, stressing the quality of education is important for almost all the countries. The overall score in a sixth grade test is a simple but clear measure of current efforts to improve the quality of education in Latin America.

VI

Assessing the impact of the strategies in the prototype country

The ten world experts were asked to provide the following two estimates for each measure applied in "Concordia": firstly, the average percentage by which academic performance would improve among sixth grade pupils who have hitherto been obtaining a score of 50 out of a 100 in a standardized reading and mathematics test, by comparison with a control group that has not benefited from the measure (table 3, column A) and, secondly, the percentage probability of the measure being fully implemented, given the technical and political considerations involved (table 3, column B).

Subsequently, the authors carried out a third estimate: the likely increase in unit operating costs resulting from the measure, including capital spending, calculated on an annual basis (annex 1 and table 3, column D).

It was considered inappropriate to ask the experts for an estimate of the costs, as this is a technical matter that would take a long time to work through and that, furthermore, has a "right" answer (or an answer that the reader can amend on the basis of the situation in a specific country). The standard used for the cost estimates was a medium-sized, middle-income country in the region (see the characteristics of "Concordia"). A detailed explanation of the calculations is given in the annex.

VII

Calculating the cost-effectiveness index

Using the estimates described, a cost-effectiveness index was produced for each measure. This was calculated on the basis of the following:

a = percentage of the school population benefiting from the measure;
b = assuming that the measure is fully implemented, percentage increase expected in the test scores of the beneficiary population;
c = percentage probability of the measure being fully implemented, and
d = percentage increase in annual operating costs for the beneficiary population.

TABLE 3

Expert opinion on the cost-effectiveness of educational measures

Number and description of measure, in descending order of cost-effectiveness[a]	A Estimated increase in academic performance (%)[b]	B Likelihood of adequate implementation (%)[c]	C Likely impact (%) [A*B]	D Estimated increase in cost (%)[d]	E Cost-effectiveness [C/D]	F Unit cost of increasing academic performance by one point (dollars)
2. Assign best teachers to first grade	19.8	58.0	11.5	0.0	1531.2	0.003
3. Enforce regulations on official length of school year	10.6	49.5	5.2	0.0	699.6	0.006
1. Policy of not switching classroom teachers during school year	5.0	72.0	3.6	0.0	480.0	0.008
13. Carry out testing of 10% of fourth graders and distribute results to teachers	4.1	73.5	3.0	0.1	60.3	0.066
11. Decentralization	9.3	47.5	4.4	0.1	59.2	0.068
27. Media campaigns to encourage parents to provide early stimulation and read with their children	8.1	71.9	5.8	0.1	46.6	0.086
10. Use of MIS to identify low-performing schools	10.2	68.0	6.9	0.3	27.7	0.144
25. Eyesight testing by school and referral	3.2	66.0	2.1	0.1	21.1	0.189
35. Grant programme (US$ 50/student) to improve pre-service teacher training	11.8	56.0	6.6	0.4	18.9	0.212
14. Carry out testing of 10% of fourth graders and provide remedial strategies (one week)	12.3	60.0	7.4	0.4	17.4	0.230
9. Reduce size of bureaucracy and pay higher salaries	8.9	36.0	3.2	0.3	12.9	0.311
36. Revise curriculum in mathematics and reading, and distribute	1.9	66.9	1.3	0.1	12.7	0.315
38. Interactive instruction by radio	10.7	57.5	6.2	0.5	11.4	0.350
37. Prepare and implement a bilingual curriculum	11.7	50.6	5.9	0.5	11.2	0.356
15. Universal testing of fourth graders	12.3	62.5	7.7	0.8	9.7	0.411
18. Provide learning materials for individualized instruction	16.5	72.5	12.0	1.5	8.0	0.500
26. Broadcast high-quality pre-school television programmes	8.2	72.4	5.9	0.8	7.9	0.505
12. Decentralization with good supervision	19.4	53.5	10.4	1.3	7.8	0.510
16. Provide standard textbooks for use in class	11.5	74.5	8.6	1.5	5.7	0.699
19. Provide classrooms with small libraries	8.5	76.5	6.5	1.4	4.7	0.846
17. Provide standard textbooks and train teachers in usage	18.4	66.0	12.1	3.8	3.2	1.235
5. Extend length of school year by a week	8.0	83.5	6.7	2.3	3.0	1.347
32. Train teachers in developing cooperative learning methods	12.2	52.0	6.3	2.3	2.8	1.419
33. Train teachers in using programmed learning materials	7.6	64.0	4.9	2.3	2.2	1.850

(continued on next page)

Table 3 *(continued)*

Number and description of measure, in descending order of cost-effectiveness[a]	A Estimated increase in academic performance (%)[b]	B Likelihood of adequate implementation (%)[c]	C Likely impact (%) [A*B]	D Estimated increase in cost (%)[d]	E Cost-effectiveness [C/D]	F Unit cost of increasing academic performance by one point (dollars)
34. Acquaint teachers with modern curriculum	7.0	64.0	4.5	2.3	2.0	2.009
40. Multiple interventions: learning packages, school-based management, training, testing	26.8	45.0	12.1	7.0	1.7	2.322
29. Development-oriented pre-schooling (50% unit cost of primary school)	13.0	54.5	7.1	4.2	1.7	2.354
28. Development-oriented pre-schooling (100% unit cost of primary school)	18.3	51.5	9.4	8.3	1.1	3.538
24. Yearly check-up and referral by doctor	4.1	61.5	2.5	2.4	1.1	3.807
30. Caretaking of pre-schoolers with no educational development	5.7	65.9	3.8	4.2	0.9	4.441
6. Pay teachers in rural schools salary increment of 50%	18.6	65.0	12.1	13.5	0.9	4.467
4. Extend daily schedule by one hour	17.0	67.0	11.4	15.0	0.8	5.268
7. Raise teachers' salaries by 10%	6.3	72.5	4.6	9.0	0.5	7.882
21. School feeding programmes (50% receive free snack)	5.1	63.0	3.2	6.8	0.5	8.403
8. Raise teachers' salaries by 20%	10.7	74.5	8.0	18.0	0.4	9.032
20. School feeding programmes (100% receive free snack)	5.6	74.5	4.2	13.5	0.3	12.943
31. In-service training for teachers without follow-up materials	4.1	63.5	2.6	10.0	0.3	15.364
23. School feeding programmes (50% receive free lunch)	6.9	59.0	4.1	18.0	0.2	17.686
39. Provide one-hour access to computers each week	4.4	51.5	2.3	14.9	0.2	26.337
22. School feeding programmes (100% receive free lunch)	8.1	67.5	5.5	36.0	0.2	26.337
Averages	**10.3**	**62.8**	**6.5**	**5.1**	**76.9**	**4.1**

[a] See box 1 for detailed descriptions of the measures.
[b] Estimated average percentage increase in student achievement in a standardized mathematics and reading test given to sixth graders, with an initial score of 50 out of 100, compared to a control population that did not benefit from the measure.
[c] Percentage probability of the measure being implemented adequately given the technical and political considerations involved.
[d] Likely increase in annual unit operating costs as a result of the measure, including projected annualized capital cost.

For the beneficiary population I (Index) = b*c/d; for the population as a whole both the costs and the effects fall proportionately, although the index value remains unchanged (for example, I = b*c*a/d*a).

Table 3 gives the efficiency index values of the 40 measures considered, in descending order. However, there are many possible ways of summarizing the information from this table and drawing conclusions, including the percentage increase expected in test scores, the rise in scores in relation to the feasibility of implementing the measure, and cost-effectiveness.

VIII

Cost per unit of impact

It is sometimes useful to compare the different measures by the cost of raising academic performance by 1% with each of them. This "cost per unit of impact (K)" is equal to the total annual cost divided by the likely impact. In this case: K = d*200/(50*b*c). In the formula, 200 is the average unit cost in dollars (box 2) and 50 is the average number of correct answers in the test.

The results are given in column F of table 3. They are proportional to the cost-effectiveness index and take account of the different weightings arrived at by considering the two constants (200 and 50).

Because of this characteristic, analysis of the results is carried out only for the cost-effectiveness index.

IX

Analysis of the main results

The six measures that in the judgement of the experts would have the greatest impact on learning if implemented successfully have been identified (table 4).

As was expected, the first place is taken by an approach based on "systems" that bring together a great variety of measures. By a wide margin, this is deemed to be the strategy that can be expected to produce the greatest effects, if implemented properly. It is interesting to note, however, that the next five strategies are single-measure ones and have an effect that is very similar in scale. These include assigning the best teachers to the first grade, introducing a decentralized system while strengthening the central authority, giving rural teachers a substantial pay rise, providing standardized text books and training in their use and offering development-oriented pre-school programmes.

However, the experts expressed their concern about the difficulty of putting these approaches into practice, particularly the system-based one (column B of table 3). When the expected effect on learning and the likelihood of proper implementation are taken into account simultaneously (the two estimates are multiplied) the likely impact changes considerably (column C of table 3). Table 5 shows the six strategies that then have the greatest impact.

The six best measures now include extending the school day by one hour and providing personalized learning packages. It can be seen that, once the difficulties of application are considered, the system-based approach is no more efficient than providing a number of inputs separately. Furthermore, pre-school programmes and decentralization, being difficult to put into practice, drop out of the list of the six best measures.

The effectiveness of strategies, however, has to be compared on the basis of a similar increase in cost. When the likely (net) increase in performance is divided by the increase in cost (column E of table 3), then the most desirable strategies can finally be identified. Table 6 shows the six measures that obtained the highest overall index value for cost-effectiveness.

The measures calculated as having the highest cost-effectiveness index value are not the ones expected to have the greatest impact, a number of them being associated with some type of impact that is virtually cost-free. The only measure that is kept is number 2 (assigning the best teachers to the first grade) as, despite its very low cost, the experts consider that it would have a large impact.

Another measure that meets this condition is enforcement of the regulations on the length of the official school year, although this could entail political complications, especially in countries where teacher strikes are common. Preventing teachers from switching class during the school year does not involve major costs either, but could cause administrative problems. A teacher withdrawing during the school year would have to be replaced by

TABLE 4
The six measures with the greatest impact on the target population if implemented successfully
(Percentages)

Measure		Expected increase in test scores
40.	Multiple interventions: learning packages, school-based management, training, testing	26.8
2.	Assign best teachers to first grade	19.8
12.	Decentralization with good oversight	19.4
6.	Pay teachers in rural schools salary increment of 50%	18.6
17.	Provide standard textbooks and train teachers in usage	18.4
28.	Development-oriented pre-schooling (100% unit cost of primary school)	18.3

TABLE 5
The six measures with the greatest impact on the target population, taking into account the feasibility of implementation
(Percentages)

Measure		Expected increase in test scores
17.	Provide standard textbooks and train teachers in usage	12.1
40.	Multiple interventions: learning packages, school-based management, training, testing	12.1
6.	Pay teachers in rural schools salary increment of 50%	12.1
18.	Provide learning materials for individualized instruction	12.0
2.	Assign best teachers to first grade	11.5
4.	Extend daily schedule by one hour	11.4

TABLE 6
Measures expected to have the highest cost-effectiveness index value

Measure		Cost-effectiveness index value
2.	Assign best teachers to first grade	1 531.2
3.	Enforce regulations on official length of school year	699.6
1.	Policy of not switching classroom teachers during school year	480.0
13.	Carry out testing of 10% of fourth graders and distribute results to teachers	60.3
11.	Decentralization (without improving oversight)	59.2
27.	Media campaigns to encourage parents to provide early stimulation and read with their children	46.6

TABLE 7
Measures expected to have the lowest cost-effectiveness index value
(Percentajes)

Measure		Cost-effectiveness index value
22.	School feeding programmes (100% receive free lunch)	0.2
39.	Provide one-hour access to computers each week	0.2
23.	School feeding programmes (50% receive free lunch)	0.2
20.	School feeding programmes (100% receive free snack)	0.3
31.	In-service training for teachers without follow-up materials	0.3
8.	Raise teachers' salaries by 20%	0.4

a temporary stand-in, as an alternative to transferring a teacher from another school.

The cost of administering tests to samples of pupils is considerably lower than the cost of doing so by means of cluster sampling. For this latter method to be practical, the results would have to be presented to the user in an amicable fashion and include suggestions for improvement.

In the experts' opinion, centralized educational administration in the region is so "ossified" that decentralization, even without a stronger supervisory authority, ought to have a positive effect, being virtually cost-free. Lastly, media campaigns apparently cost relatively little, but can have a considerable impact.

Table 7 shows the measures that have the lowest cost-effectiveness value. Obviously, school meal programmes are expensive and their effect on learning might be only marginal, but they could have a substantial influence on other parameters, such as attendance, health and income distribution. Again, modest pay rises that are not accompanied by greater responsibilities are not an efficient approach (in terms of cost). Lastly, computers are apparently not at present an efficient option for primary education either.

X

Comparison of these results with the estimates of Latin American planners

When the estimates of the panel of experts are compared with those of the planners and advisers in Latin American ministries of education who attended the planning courses run by UNESCO in 1994 and 1996, it is found that the latter are more optimistic than the experts about the impact the measures could have (on average, 19% as against 10%). It is possible that the planners are not sufficiently familiar with the literature dealing with the effectiveness of measures, which tends to be very conservative (Schiefelbein, Wolff and Schiefelbein, 1998). Again, when it came to opinions about the likelihood of successful implementation, exactly the opposite occurred (48% as against 63%). In particular, the planners inclined less towards action requiring higher financing, and their figure for the increase in unit cost produced by each measure was 14% on average, almost three times the percentage arrived at by the authors (5%).

As regards cost-effectiveness calculations, the values obtained by the planners and the experts are of the same order (when compared using the cost estimates in the annex), although there are some differences. The planners attribute appreciably greater cost-effectiveness than do the experts (more than double) to decentralization (No. 11), prevention of class switching by teachers (No. 1), improvements in pre-service teacher training (No. 35), curricular changes (no. 36), pre-school programmes (Nos. 29 and 30), traditional in-service training initiatives (No. 31) and computer use (No. 39). The experts, meanwhile, attribute greater cost-effectiveness only to those measures that involve slimming down bureaucracy (No. 9), television programmes for pre-school children and media campaigns (Nos. 26 and 27), lengthening the school day and year (No. 4 and no. 5), a salary increment for rural teachers (No. 6) and higher pay for teachers (Nos. 7 and 8).

XI

Conclusions of the cost-effectiveness estimates for the 40 strategies

The cost-effectiveness index is a tool designed to "make thinking explicit", and the coefficients analysed have the limitations (and strengths) of the experts who submitted their estimates. Its main value lies in the help it offers in formulating important questions about the components included in the projects under consideration. It comes at a very good time for Latin America, given the growing consensus regarding the fundamental role played by education in economic and social success, the interest of the region's presidents as expressed in an agreement signed at the Heads of State Summit in 1998, the large increase in educational investment made by governments and international organizations in the 1990s and the low impact levels revealed by the reports of OECD (2000) and UNESCO (2000).

The need to decide on strategies in the sphere of education concerns not just those working in this field but also political and business leaders. Perhaps the simple instrument devised may help those who have to take decisions to distinguish between strategies that "might possibly be expected to work" and those that "are unlikely to do so" and aid in building a stronger social consensus over the need to invest efficiently in the education sector.

The exercise carried out is also an excellent training method for policy makers and planners, as it forces them to make their thinking explicit. The best way of going about this is to set up small groups that work with around five measures. The idea is to work as a team and submit the conclusions to a plenary session. This

reduces inconsistencies, ambiguities and contradictions over the cost-effectiveness of the project or strategy.

Generally speaking, many of the programmes and projects implemented in Latin America do not accord with the recommendations derived from this exercise. In particular, simple, low-cost approaches such as teacher assignment and continuity and media campaigns are not usually included in projects. Unfortunately, when empirical information is obtained, very few measures can show substantial improvements in the level of learning.

The above is particularly true of measures that are currently in vogue, such as decentralization, testing and computer use. Mistakes are costly, and at a time when education is being proclaimed as a key factor in economic and social development, and a great deal of investment is being put into it in the region and around the world, it is indispensable for the impact of the different measures to be re-examined.

The fact that no more than 10 experts participated, even though these were unquestionably of the highest level, may reduce the reliability of the results: if just one of them expressed an exceptional view, the effect on the overall average would be significant. The authors have identified other experts and recommend that, at a later date, new surveys be conducted with the participation of 20 to 25 experts. Similar exercises can be carried out for intermediate and higher education.

XII

Recommendations deriving from examination of the results

The exercise suggests four recommendations for policies associated with educational measures:

i) Implement those measures that have a "large impact on performance", particularly those involving multiple initiatives, teaching materials and differential support for rural education, where the cost is moderate. These measures should be implemented because of the considerable effect they can be expected to have, in spite of the cost. Caution is needed, however, in regard to potential problems with developing and applying them.

ii) Implement measures that cost very little and have a positive impact. These are the ones that are generally overlooked (for example, regulating the length of the school year or assigning good teachers to the first grade).

iii) Avoid measures that entail a high cost and that do not in themselves (in the absence of supplementary activities or objectives) produce a major impact, i.e. do not constitute a good investment. This applies particularly to pay rises, computer use and school feeding programmes.

iv) Compare the projects put forward for improving the country's education with the estimates of the panel of experts and account for the differences. At the least, having available a range of strategies on which the experts have given their views makes it possible to arrive at a detailed explanation of these differences.

When questions are formulated in future, it would be advisable for the expected costs and effects to be made explicit, with a view to giving greater transparency to the thinking of those proposing the strategies in relation to more debatable aspects which may or may not work in certain circumstances. Exercises of this type can give education policy planners timely warning of the relative value of the strategies they have adopted, enabling them to reassess their assumptions. Calculating the cost of measures is very useful in itself, as this is something that is not generally done in a systematic way. Thus, these estimates can be used for evaluation purposes, or at least to provide a reference figure, with a view to calculating how much the components of these projects would cost in different countries.

Latin America now has a great opportunity to carry out applied research, as all the countries in the region are conducting assessments on a national scale, whether by means of pupil samples or clusters, and will now be in a position to use this research as an instrument to help them identify which strategies produce the best learning outcomes.

ANNEX 1

Estimated unit cost increase of each educational measure[a]

Measure	Increase in unit cost (%)	Explanation of cost calculation
1	0.01	Nominal cost of US$ 30,000.
2	0.01	Nominal cost of US$ 30,000 for information and oversight.
3	0.01	Nominal cost of US$ 30,000 for providing information and ensuring enforcement.
4	15.0	A 16.7% increase in hours, giving a 16.7% increase in salaries (90% of total cost). 16.7% times 90% is 15%, or US$ 30 per student.
5	2.3	One extra week of work, as above, giving US$ 4.50.
6	13.5	30% of students are in rural areas. For this group, teacher salary increase is 50% of 90% of unit cost (0.45 times US$ 200) or US$ 90 per student in the target group. For the system as a whole, cost is US$ 27 per student (total cost is US$ 90 times 600,000 against a total of US$ 400 million).
7	9.0	Increase would be US$ 18 per student.
8	18.0	Increase would be US$ 36 per student.
9	0.3	Bureaucrats are 5% of the total budget, or US$ 20 million, which is US$ 10 per student. Cost is cut by half to US$ 10 million by reducing number of bureaucrats by half and increased by US$ 10.5 million by better salaries. Resultant increase is US$ 500,000. Can also be calculated directly on unit cost basis. Current cost is US$ 10. If bureaucracy halved, unit cost is US$ 5; if cost is increased 2.1 times, new unit cost is US$ 10.5. Total unit cost increase is US$ 0.50.
10	0.3	Cost of MIS estimated at US$ 1,000,000 or US$ 0.50 per student.
11	0.1	Since there is no improvement in ministry of education capacity for oversight and assessment, the cost is estimated at only US$ 300,000 or US$ 0.15 for booklets for principals and PTAs plus dissemination and an information system.
12	1.3	To improve flow of information and capacity for regulation and oversight, cost is about US$ 3 million to strengthen testing, statistics and financial management. Testing is US$ 5 per student for 330,000 students in fourth grade, plus about US$ 1,000,000 for MIS and miscellaneous costs of US$ 300,000. Total unit cost is US$ 2.65.
13	0.1	Approximately US$ 5 per student for adequate testing. However, only 10% of fourth graders are tested. Fourth graders are 1/6 of the total, therefore 1.67% of all students are tested. For these students, the cost is US$ 5; for the system as a whole the cost is US$ 0.08. Distributing the results to fourth grade teachers adds US$ 0.02 to give a total of US$ 0.10.
14	0.4	The cost of the follow-up seminar, provided to all fourth grade teachers, is the same as one week of teacher's time, giving US$ 4.50. Unit cost is US$ 4.50/6 or US$ 0.75 plus the US$ 0.10 for testing which gives US$ 0.85 for the system as a whole.
15	0.8	Includes one week of training. Universal testing of all fourth graders is conducted, for cost of 1/6 of US$ 5.00 or US$ 0.83, plus US$ 0.75 of training. Total cost is US$ 1.58.
16	1.5	Should state that two textbooks are provided (Spanish and mathematics). Assumes US$ 1.50 for each book for total of US$ 3 per student.
17	3.8	Teacher salary is assumed to be 90% of US$ 200 unit cost, which is US$ 180 per student. Divided by 40, one week of teacher's time comes to US$ 4.50 per student. If we add this to the US$ 3 per student above, we arrive at US$ 7.50.
18	1.5	Cost of printing is US$ 8.75 (four textbooks) and cost of preparation is US$ 500,000 which is US$ 0.25 per student. Overall cost is US$ 9. Books last for three years, yielding US$ 3 cost.
19	1.4	Assume each book costs US$ 2 (in bulk), so library costs US$ 400. Cost over five years is US$ 80. With 29 students per classroom unit cost is US$ 2.75.
20	13.5	Estimate milk at US$ 0.10 and bread at US$ 0.05. Total is US$ 0.15 times 180 days or US$ 27 per student.
21	6.8	Same as above but given to half the students; hence, unit cost is US$ 13.50.
22	36.0	Lunch is estimated at US$ 0.40 per day; therefore, cost is US$ 0.40 times 180 or US$ 72 per student.
23	18.0	Half of above or US$ 36.
24	2.4	Detection only. Does not include medical treatment provided by the health system. One doctor can check 28 students a day or, over 180 days, about 5,000 per year. Doctor's salary is US$ 24,000 so the unit cost is US$ 4.80.
25	0.1	Detection only, but near-sighted students can sit at the front. Can be done by teacher if materials and some extra money are provided. Cost is US$ 0.20 per student.
26	0.8	250 television programmes provided for home viewing only. Estimate absolute cost at US$ 3 million, assuming high-quality programmes such as Sesame Street purchased.
27	0.1	Estimate overall cost at US$ 500,000 for preparation and purchase of television time, which is US$ 0.25 per student.

(continued on next page)

ANNEX 1 *(continued)*

Measure	Increase in unit cost (%)	Explanation of cost calculation
28	8.3	Cost is US$ 200 for 50% of students pro-rated over 6 years which comes to US$ 33.33 for the target group and US$ 16.67 per student for the system as a whole.
29	4.2	Half the cost. Results in US$ 16.67 for the target group and US$ 8.34 per student for the system.
30	4.2	Provided to 50% of students. Cost is same as above.
31	10.0	Four full weeks of teacher upgrading is estimated at four times US$ 4.50 which comes to US$ 18. Adding cost of course preparation, material and travel gives approximately US$ 20.
32	2.3	Training for one week is estimated at US$ 4.50 as above.
33	2.3	Same as above.
34	2.3	Same as above.
35	0.4	Grant programme is estimated at US$ 200 per graduate teacher (US$ 50 x 4) who will teach for 10 years, so the cost is US$ 20 per year per teacher. Since there are 29 students per teacher, the annual cost is 20/29 or US$ 0.70. (Another way of looking at this is that each year 7,000 new teachers are trained to replace 10% of teaching force of 70,000. 7,000 new teachers times US$ 200 gives US$ 1,400,000 or a US$ 0.70 unit cost).
36	0.1	Not based on detailed research but rather on contracting local experts and distributing curriculum guide. Cost estimated at US$ 400,000, mainly for local experts and a very small amount for distributing curriculum guide (US$ 1 per guide, 70,000 copies).
37	0.5	Bilingual curriculum has a low fixed cost of about US$ 100,000 to contract bilingual teachers. This is US$ 0.50 per student reached (10% of students). Books have to be provided and teachers trained for at least one week per year. Therefore, the variable cost for 10% of the population is US$ 4.50 for one week of training plus three books at US$ 2 each totalling US$ 6; total is about US$ 10.55 for indigenous students. Cost to the entire system is 10% or US$ 1.05.
38	0.5	US$ 500,000 for preparation which is US$ 0.25 per student, without using foreign technical assistance (case of Venezuela). Cost of radio (US$ 29 per set per class) is about US$ 1 per student but it lasts three years so it is US$ 0.33. Materials are about US$ 0.50. Total unit cost is US$ 1.08.
39	14.9	US$ 2,000 for the computer plus US$ 100 for other physical modifications. Computer lasts four years; therefore, computer cost is US$ 525 a year. Computer serves 30 students at one hour per week (30 hours per week) or US$ 16.50 per student. Add a full-time teacher working 27 hours per week (once in the week a class works with two teachers for one period). Teacher cost comes to 1/27 of 90% of unit cost, or US$ 6.67. Maintenance for computer is US$ 200 per year or another US$ 6.67 per student. Total is US$ 29.84 per student. Cost could be reduced significantly if outdated computers were purchased for US$ 1,000, which would also reduce security and maintenance costs by half. Another option is to hire a technician rather than a teacher at 2/3 cost. Total cost could be reduced to US$ 8.25 plus US$ 5 plus US$ 3.33 or US$ 16.58; this, however, may not be feasible.
40	7.0	Cost is based on above calculations as follows: textbooks US$ 3; self-help learning materials US$ 3; one week's training US$ 4.50; local school management US$ 2.65; evaluation system US$ 0.85. Total cost is US$ 14.

Bibliography

Araujo Oliveira, J.B. (1998): *A Pedagogia du Sucesso*, Brazil, Belo Horizonte.

Carnoy, M. and C. de Moura Castro (1997): *La reforma educativa en América Latina: Actas de un seminario*, Washington, D.C., Inter-American Development Bank (IDB).

Castillo, M. (1998): *La descentralización de los servicios de educación en Nicaragua*, serie Reformas de política pública, No. 53, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).

Chrispeels, J. (1997): Educational policy implementation in a shifting political climate: The California experience, *American Education Research Journal*, vol. 34, No. 3.

El Salvador, Ministry of Education (1996): *Los educadores y la comunidad*, San Salvador.

Fuller B. and P. Clarke (1994): Raising schools effects while ignoring culture?, *Review of Economic Research*, vol. 64, No. 1.

Gutman, C. (1993): *Todos los niños pueden aprender. El Programa de las 900 Escuelas para los sectores pobres de Chile*, Paris, United Nations Educational, Scientific and Cultural Organization (UNESCO).

Harbison, R. and E. Hanushek (1992): *Educational Performance of the Poor: Lessons from Rural Northeast Brazil,* New York, World Bank.

Hornik, R., H. Ingle, M. Macanany and W. Schramm (1973): *Television and Educational Reform in El Salvador*, Stanford, California, Stanford University.

Jamison, D., B. Searle, S. Heyneman and K. Galda. (1981): *Improving Elementary Mathematics Education in Nicaragua: An Experimental Study of the Impact of Textbooks and Radio on Achievement*, Working document, No. 5, Washington, D.C., World Bank.

Lockheed, M. and A. Verspoor (1991): *Improving Primary Education in Developing Countries,* New York, World Bank.

Meza, D. (1997): *Descentralización educativa, organización y manejo de las escuelas a nivel local: El caso de El Salvador*, LAC report, No. 9, Washington, D.C., World Bank/Programme for Education with Community Participation.

McEwan, P. (1995): *Primary School Reform for Rural Development: An Evaluation of Colombian New Schools*, Washington, D.C., World Bank.

OECD (Organisation for Economic Co-operation and Development) (2000): *Literacy in the Information Age: Final report of the International Adult survey*, Canada, Statistic Canada.

Psacharopulos, G., C. Rojas and E. Vélez (1995): Achievement evaluation of Colombia's Escuela Nueva: Is multigrade the answer?, *Comparative Education Review*, vol. 37, No. 3.

Reimers, F. and N. McGinn (1997): *Informed Dialogue. Using Research to Shape Education Policy around the World*, Westport, Connecticut, Praeger.

Rojas, C. and Z. Castillo (1998): *Evaluación del Programa Escuela Nueva en Colombia*, Bogotá, Instituto SER de Investigación.

Rojas, C. and M. Esquivel (1998): *Assessment Programs in Latin America*, Working document, Washington, D.C., World Bank.

Schiefelbein, E. (coord.) (1998): *Educación en las Américas: calidad y equidad en el proceso de globalización*, Washington, D.C., Organization of American States (OAS).

Schiefelbein, E., L. Wolff and P. Schiefelbein (1998): *Cost-Effectiveness of Education Policies in Latin America: A Survey of Expert Opinion*, Washington, D.C., IDB.

Swope, J. and M. Latorre (1998): *Fe y Alegría Schools in Latin America. Educational Communities where the Pavements Ends*, Santiago, Chile, LOM Ediciones.

UNESCO (1998): *Primer estudio internacional comparativo*, Santiago, Chile, Laboratorio Latinoamericano de Evaluación de la Calidad de la Educación.

_____ (2000): *Alfabetismo funcional en siete países de América Latina*, Santiago, Chile.

Verspoor, A. (1989): *Pathways to Change: Improving the Quality of Education in Developing Countries*, Working document, Washington, D.C., World Bank.

Wolff, L., E. Schiefelbein and J. Valenzuela (1994): *Improving the Quality of Primary Education in Latin America and the Caribbean*, Washington, D.C., World Bank.

World Bank (1994): *Priorities and Strategies for Education,* Washington, D.C.

What schools teach us *about educating* poor children *in Chile*

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A great deal of effort has been put into education reform in Latin America since the early 1990s. Extending the coverage of educational opportunities and improving the quality of the education delivered in schools are crucial for the countries of the region, where education in State schools has often been of a low standard. It is not enough just to study macro education policies as they are formulated by governments and implemented by centralized ministries of education. What is promised or envisioned on paper is often quite different from what actually happens in school establishments. It is important to understand, at the micro level, how schools are functioning in practice as they implement educational policies. Educational policies and social reality come together in school classrooms and schools can teach us a great deal about achieving quality in basic education. The focus of this article is on poor children in poor schools and the continuing challenges of educating children in poor communities. Chile's national programme to improve the quality of education and educational outcomes in 900 of its poorer primary schools, known as the P900 programme, provided an ideal framework for identifying and studying the challenges faced by schools in poor communities in trying to deliver a high-quality education to their children and for understanding how and why they are struggling to meet national standards. This study is concerned with learning from schools to achieve a better understanding of what they see, in the context of their community and the student population they serve, as the practical realities of educating poor children. At the national level, a macro research methodology was used to identify the worst-performing schools in the P900 programme on the basis of their results in standardized examinations and the trends seen in these results over the 1990s. A small purposive sample of the worst-performing schools was drawn from this group and quota sampling techniques were used to ascertain their main characteristics. A micro study of each of the schools selected was then carried out, involving school visits and interviews to understand school and pupil performance and to identify critical factors that might be amenable to change. In-depth reports were prepared on each school. This article synthesizes the lessons learned from these micro studies.

I

Evaluating education quality: macro to micro

A great deal of effort has been put into education reform in Latin America since the early 1990s.[1] In Chile, a major emphasis of reform is on improving the quality and equity of education in the public sector.[2] The country is striving to improve education through initiatives in four main areas: reforming the curriculum, strengthening university teacher training programmes, extending basic education[3] from half-day shifts to full-day schooling and improving quality. These initiatives began in the early 1990s but the undertaking is a considerable one and the impact of the reforms, to the extent they are successful, will necessarily take time to come through.

Educational reform and national education policies do not automatically translate into better education in schools. Reforms –to the macro, legal and financial framework– are an important starting point. Turning reforms into policies, programmes, delivery and actions affecting students in schools, though, is a great challenge involving many actors and variables. Reforms are statements of intent. Consequently, it is not enough just to evaluate stated reforms. The place to look for achievements is in schools and their individual student outcomes: the micro perspective.

The focus of this article is on poor children in poor schools, the continuing challenge of educating children in poor communities, and what this can teach us about achieving quality in basic education.[4] Because the school is the bottom rung on a bureaucratic ladder of important education delivery actors, it is necessary first to understand the unusual structure of basic education in Chile and the reasons behind it. The Chilean education system is a mixed public-private one. There are three types of primary school: municipal schools which receive central government funding (called a subvention) and are administered by municipalities, private schools which receive the same central government subvention and are privately run, and privately financed, privately managed schools. This tripartite arrangement is the legacy of a school reform in the early 1980s that transferred school management away from central government authorities and made it a local municipal or private responsibility. It is also a result of government policy at the time, which aimed to create incentives for the private sector to provide educational facilities and introduce competition into the system. Effectively, about 8% of primary schools are fully private, i.e. in the third category. Just over a quarter of school establishments are in the mixed category of private schools that receive the central government subvention, and the remaining two thirds are municipal.

Education policies and social reality come together in the classroom in schools across the country. In evaluating educational quality, it is not sensible or fair to compare student and school performance solely on the basis of standardized test results. Students enter school with "quality" differences that result from a multiplicity of factors ranging from brain development, which is enormously affected by early childhood nutrition and care, to positive home learning environments and social interaction. These factors limit what schools alone can achieve in purely numerical terms, especially when

☐ This article synthesizes and amplifies the findings of a macro-micro study entitled *Achieving educational quality: What schools teach us* published by ECLAC in January 2000. The author would like to express her gratitude to the Chilean Ministry of Education and its P900 schools programme, provincial and municipal authorities and, especially, each of the schools in the study that shared their time, energy and knowledge. These schools are the centre of this work. The author would like to thank Jorge Katz for his valuable comments on the draft version of this article, Joe Ramos for his advice on project design and comments on an earlier version, Pilar Bascuñán, Elizabeth Love and Howard La Franchi for their expertise and help with school interviews and reporting and the school principals, teachers, children and parents who gave their time and their insights into the continuing challenges of educating children in poor communities.

[1] See Gajardo (2000), World Bank (1999), PREAL (1998) and Rojas and Esquivel (1998).

[2] See García-Huidobro (1999), García-Huidobro and Jara (1994), Schiefelbein and Schiefelbein (1999), Cox (1997) and Carnoy and McEwan (1997).

[3] In Chile, compulsory basic (primary) education lasts for eight years.

[4] See Carlson (2000).

they are located in poorer socially and economically disadvantaged neighbourhoods where they face much greater challenges than do schools that are located in richer neighbourhoods.

Education quality cannot be evaluated solely on the basis of which students and schools have the highest scores in standardized exams, since different schools are teaching very different types of students. Ideally, we would like to be able to evaluate individual improvements in student performance as children progress through primary and secondary school. This is rarely possible. At best, in some countries, we have national and international educational testing, often in the fourth and eighth grades, which provides a cross-sectional evaluation of the performance of fourth and eighth graders that year. These results, when aggregated to the school level, provide a snapshot of the performance of fourth and eighth grade students in individual establishments.

This is the case in Chile with the Sistema de Medición de la Calidad de la Educación (Education Quality Measurement System), or SIMCE. The annual SIMCE school results are widely available and are even published in national newspapers. Parents and students are encouraged to consult them. These statistics can serve many purposes, and they have been well used and misused.[5] Ricardo Lagos, former Minister of Education and now President of the Republic, has said that SIMCE school results are the only way of evaluating school performance objectively at a national level in order to provide special help to poorer, more needy schools (see Undurraga, 1998). Again, schools have used good SIMCE results to market themselves in order to attract more students, especially in the case of private schools receiving public subsidies. This is important because the great bulk of school subsidies are linked to the number of pupils attending. Parents also use the annual school results, published in local newspapers, to help them select the best school for their children.

Many school administrators and teachers have a different view. They find SIMCE an unfair yardstick of their performance and the performance of their students, especially in poorer neighbourhoods. They feel that it does not take into account the differential capacities of their student populations and the differential resources available to schools, or the degree of parental interest and participation. Each of these views is meaningful.

In short, student outcome data are a very useful performance measure if employed appropriately. But they tell us only the end result, the "what". More important than the "what" is the "why". In order to understand learning outcomes it is essential to understand what happens at school. What can schools teach us? The school is the centre of learning for at least twelve years of a person's life. Yes, we know that out-of-school factors are terribly important, particularly in poor neighbourhoods and poor families. But the school is still the first level of institutional responsibility for student learning. For that reason it is essential to "get down to the school" and study the "school reality" if we are to understand the many factors that come into play there.

[5] Appropriate use of SIMCE results for fourth grade needs to take into account known measurement and interpretation problems which have been discussed by several researchers: see Martínez (1996), Espínola (1996), Olivares (1996) and, most notably, Rodríguez (1996). These can produce an upward bias which may artificially inflate scores, especially in schools with poor educational quality and smaller schools. Published statistics on trends in average performance by school type, e.g., municipal, private subvention or P900, are distorted by many factors including the continuity of the testing instruments, the effects of many new schools carrying out testing (Mizala and Romaguera, 1998) and the continuing issue of how examinations are marked. Others (Eyzaguirre and Fontaine, 1999) are concerned about the low difficulty level of eighth grade SIMCE, corresponding to two to three grades below grade level, which they worry may be a limiting factor in educational quality improvements and which they observe shows a lack of continuity between the requirements of basic and secondary education. These issues are beyond the scope of this study but have been kept in mind.

II

Educational performance in poor schools

The Chilean education authorities provided an opportunity to examine educational performance in relation to the national programme for improving the quality of educational outcomes in 900 of Chile's poorer primary schools, known as the P900 Programme.[6] The education authorities were interested in finding out why some schools did not improve despite having had years of special inputs and attention from this programme, and wanted help in doing so in order to take corrective action. Initially, ECLAC had proposed just the reverse: to investigate why some schools excelled in spite of common difficulties and to disseminate "lessons learned". In any event, similar issues arise whether one is trying to measure why some schools and students excel or why some schools and students do not measure up to expectations. Both approaches need to combine an assessment of quantitative results with qualitative research that can explain these results.

It was decided to concentrate on the school as the centre of learning and decision-making and to study what happens in schools at first hand. Schools are where educational policies and programmes are implemented and put to the test within the context of the many factors that play a role in achieving educational quality. The school is the "front line" where school authorities first confront the situation of children and their preparedness for learning. It is where the intangibles become tangible. Consequently, the key feature of this study is the knowledge gained from within school establishments, since the school is where policy and practice are played out.

The research was carried out during the 1998 school year, which in Chile is March to December. We proposed a two-pronged methodology that in general terms used both quantitative and qualitative methods. It was essential that unbiased quantitative methods be used to identify the so-called "worst P900 schools" and track their performance over time on the basis of their SIMCE results since 1990, when P900 began. Over 2,100 municipal and private primary schools in receipt of the government subvention had participated in the P900 for one or more years. Out of this large number of schools, a core group of 308 schools that had participated in P900 for five years or more and had still not graduated from the programme was identified, and from those the 100 currently worst-performing schools were selected. A small purposive sample of poorly performing schools was then drawn from this last group using quota sampling techniques to reflect the main characteristics of these schools with respect to the major domains of interest, i.e. urban and rural schools, small, medium-sized and large schools, poorer and better off schools, schools in different geographical regions, and municipal and private schools receiving public support (see section III).

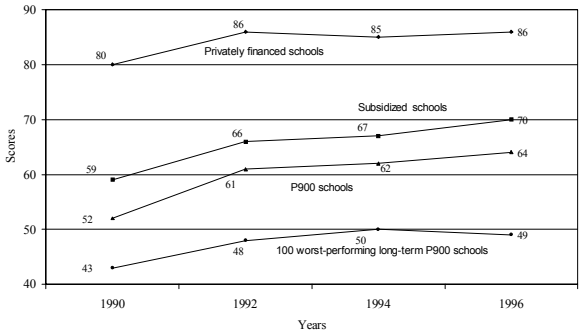
The study uses fourth grade SIMCE scores for 1990-1996 with follow-up on eighth grade SIMCE performance through to 1997. In 1996, curriculum changes began to be introduced in grades 1 to 4, followed by curriculum changes in grades 5 to 8 in later years. The testing system was changed accordingly. Therefore, the 1990-1996 SIMCE results were the last "comparable" cohort for grades 1 to 4 (and the 1991-1997 SIMCE results were the last comparable ones for grades 5 to 8). The availability of comparable results over this many years made it possible to track performance and investigate reasons for changes or lack of improvement over an extended period. Average 1990-1996 SIMCE scores for fourth grade mathematics and Spanish are shown in figure 1 and illustrate the performance patterns of different school types.

The theoretical maximum score in SIMCE tests is 100. During the period under study the average performance of fourth grade students in subsidized schools,[7] both municipal and private, increased by 11 SIMCE points to reach a high of 70 in 1996. There was a similar improvement of 12 SIMCE points among P900 schools. This suggests a broad-based improvement in educational performance if, in fact, the SIMCE

[6] See numerous documents on P900 and SIMCE published by the Chilean Ministry of Education. See also Angell (1996).

[7] Rather less than 70% of subsidized schools took the SIMCE test in 1996, partly because of exclusion and disqualification rules and partly because some schools opted not to participate. Small and remote schools were most likely not to have participated. However, to be considered for inclusion in the P900 programme schools were required to have taken SIMCE.

FIGURE 1
Chile: Average scores in fourth grade SIMCE[a] mathematics and Spanish tests, 1990-1996



[a] SIMCE = Education Quality Measurement System.

examination measurement standards were kept constant. Again, it is not possible to say how much of the increase in the P900 scores was due to improvement in individual schools and how much to the recruitment into the programme of new schools with better SIMCE performance to begin with. In both groups there was a similar large, one-off improvement in performance between 1990 and 1992, much greater than in any subsequent period.

The SIMCE performance of unsubsidized private schools shows a very large gap between the educational performance and opportunities of the elite 8% of students whose families can afford to enrol them in strictly private schools and those of children from middle class and poor families attending publicly subsidized schools. Children attending the elite schools achieved a high of 86 SIMCE points in 1996, nearly double the score of the 100 worst-performing long-term P900 schools which are the subject of this study.

Approximately 900 schools participate in P900 each year. Of the more than 2,100 school that have participated in P900 since 1990, in 1996 there were still 308 under-performing schools that had not been able to graduate out of the system even after five years or more of P900 programme support. The SIMCE scores of the 100 worst-performing schools in this group of long-term P900 schools, i.e. the bottom third, are also shown in figure 1. After an initial but relatively small rise in their scores in 1992 these schools stagnated, and between 1994 and 1996 there was actually a slight decline. It is these under-performing P900 schools that are the concern of the study.

It should be noted that these under-performing schools are not necessarily the "poorest of the poor", nor even very poor. This is illustrated by the vulnerability index of each school. Table 1 shows the vulnerability indices of the poor schools visited for the study. The Junta Nacional de Auxilio Escolar y Becas (National Student Assistance and Scholarship Board) or JUNAEB vulnerability index is used to decide the distribution of school feeding programmes, so that more food can be targeted at the neediest. The index goes from one to five, one indicating minimum vulnerability and five maximum vulnerability. The schools visited ranged in vulnerability from two to five, so they included low and medium, as well as high, vulnerability children. This is because P900 aims for some regional balance while poor schools tend to be highly concentrated in certain regions. The poorest schools are much more likely to be found among the 2,500 primary schools that were excluded or disqualified from the SIMCE tests. The great majority of them are very poor rural schools, often small, often difficult of access. When these schools receive educational assistance it is usually under the Programa de Mejoramiento de la Calidad y Equidad de la Educación (MECE), a programme designed to improve the quality and equity of education in smaller poor rural schools.

In drawing conclusions from this study it should be borne in mind that more than one third of subsidized schools are no better and probably worse off than the schools studied here. The many lessons learned from the school visits will certainly be relevant for a significant proportion of the country's subsidized primary schools, be they municipal or private, and will be very important for improving the quality and equity of primary education.

III

Micro research methodology

This paper synthesizes the micro evidence from the school visits, and draws conclusions about the macro quality issues. Essentially, the macro-micro evidence can be distinguished as the "macro-what" and the "micro-how". At the macro level, performance indicators, statistics, policies, programmes and financing are the guiding forces. At the micro level, schools tell us "how the whats are implemented" in practice and in the context of the client group, the student population served by the schools.

The qualitative methods involved daylong visits to each of the sampled schools by a two-person team comprising the project director and an accompanying journalist. In-depth interviews were conducted with all the principal actors: students, teachers, school principals, parents, school administrators and provincial and municipal education authorities. Children in the fourth grade were the group of greatest interest. This is due to the fact that in the period of analysis the P900 programme was targeted at children in the first cycle, i.e. the first four grades. Also, it was the fourth grade that SIMCE tested every two years, thereby providing a convenient output measure of fourth grade performance and, indirectly, of P900 performance/impact at the school level.

Eighth grade school performance also proved to be useful for assessing school performance in the second cycle, grades 5 to 8, and for measuring whether the early P900 input was having a continuing impact as students progressed through the system.

Done properly, the micro research is time-consuming, and it has to be carefully planned so that unbiased, truthful, unrehearsed feedback can be obtained from the school. The project director should ideally visit each school to ensure consistency and to build on lessons learned in earlier interviews. These interviews should be conducted in private, without the presence of Ministry of Education or local or provincial officials, in order to give respondents the best opportunity to provide candid comments. While the interviews were scripted insofar as questions were prepared in advance of school visits and tailored to each type of interview (school principal, technical director, fourth grade teacher, all teachers, students, parents, provincial and municipal authorities), these questions were used flexibly and developed upon in view of the way the interviews were progressing. To the extent that information may differ from that available at the national level, this is due to differences of perception and knowledge among local authorities and school officials.

The schools were selected on the basis of the following criteria:

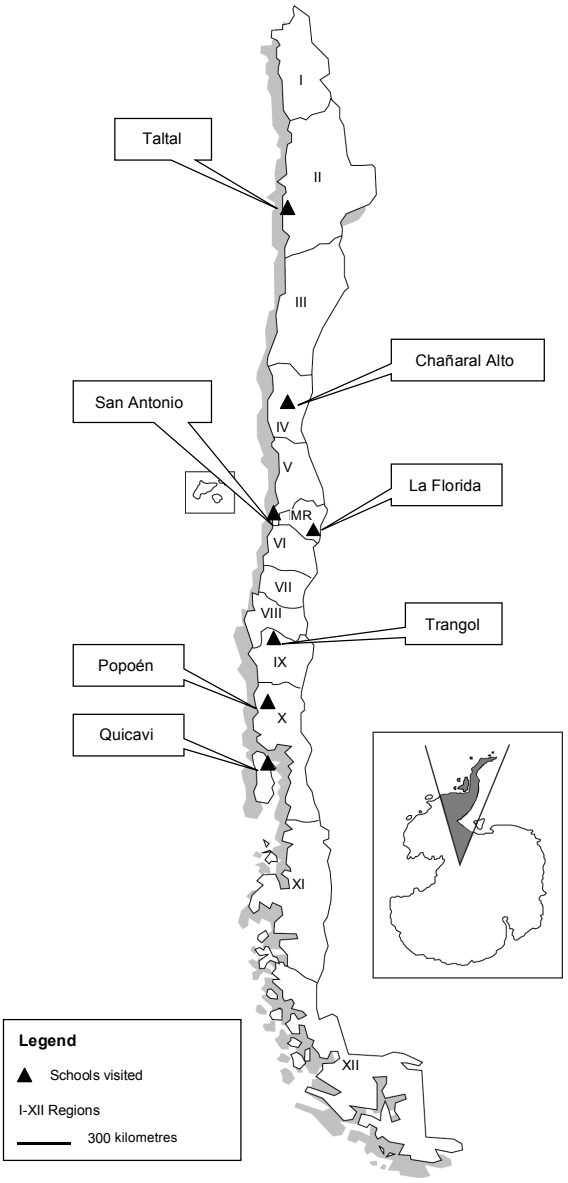
- The schools had to be currently in the P900 programme.
- They had to have been in the P900 system for five years or more and never graduated.
- Their average fourth grade mathematics and Spanish SIMCE score in 1996 (the latest year available) had to be 60 or less.
- The past trend in average fourth grade mathematics and Spanish SIMCE scores had to place them in the "hard core" of under-performing long-term P900 schools. Their scores had to show a steady or periodic deterioration or an obvious lack of improvement in contrast to the steady improvement in comparable scores shown by the P900 schools as a whole.
- Only one school could be selected in any region.
- One or two schools had to be subsidized private schools as opposed to municipal schools, to reflect the fact that about 25% of the P900 schools are subsidized private schools.
- Half the schools had to be urban and half rural, reflecting the P900 school split of 46% urban to 54% rural.
- The wide range of school enrolment sizes had to be captured.
- The full range of years spent in the P900 system by long-term schools (five to eight years) had to be covered.
- Average fourth grade mathematics and Spanish SIMCE scores vary considerably among regions. Since one of the criteria for including a school in the P900 system is the ratio between the school's SIMCE score and the average regional SIMCE score, the selected schools had to reflect this regional range of SIMCE scores.
- As many as possible of the five quintiles of the proportion of vulnerable children by commune, as assessed by the JUNAEB vulnerability index, had to be represented.

These criteria[8] were carefully classified and analysed for the nearly 900 current P900 schools, and from these the 100 schools with the lowest SIMCE results were identified and a stratified shortlist of 24 was drawn up. The principal aim was to probe as deeply as possible into each school, looking at all factors and consulting each of the actors. In order to achieve this level of understanding, and in view of presentational factors and the time and resources available, it was decided to visit just six schools, as visiting all 24 would have produced too many case studies and would not have enabled sufficient attention to be devoted to each school. Accordingly, six of the 24 shortlisted schools were selected, with quota sampling being used as opposed to random sampling techniques to reflect the main characteristics of this group of schools with respect to as many aspects of each variable as possible. It can be seen from table 1 that the P900 schools where the visits and interviews took place met the criteria and covered nearly all aspects of the key variables. In addition, two comparable schools that had done very well and graduated from the programme were interviewed to gain further insights.

Only once the final list of schools had been drawn up was the exact location of each identified on a map (see map 1). Thus, convenience and ease of access were not factors in choosing the schools. Reaching one school in Taltal involved a four hour bus trip each way from the nearest airport (Antofagasta) and two overnight stays in the town. Another school in Chañaral Alto was a one hour drive from Ovalle, which was itself a two hour drive away from the nearest airport (La Serena). The Popoén and Trangol school visits involved an extended period of travel lasting four days, Osorno and Temuco airports being the respective starting points. The result was eight complete, in-depth school case studies.[9] A brief description of the selected schools is given in table 1.

MAP 1

Chile: Location of schools visited for the micro studies



Source: Produced by author.

[8] A number of other obviously important factors that should have been considered were not taken into account because reliable and reasonably comprehensive P900 school data could not be made available. These included teacher qualifications, teacher turnover, teacher-pupil ratios, pupil repetition and dropout rates, school structures and facilities, the qualifications and experience of school principals and school income and expenditure.

[9] See Carlson (2000) for a full presentation of each of the school visits.

TABLE 1

Chile: Summary of the P900[a] schools visited

Region	Town	Municipal or subsidized private	Urban or rural	Number of students 1997	JUNAEB level 1997 (quintiles)[c]	Years in P900	Fourth grade SIMCE[b] scores 1990	1992	1994	1996
Badly performing schools										
X	Popoén	Subsid.	Rural	80	4	6	53	47	38	49
IX	Trangol	Mun.	Rural	72	5	8	30	32	41	39
XII	La Florida	Subsid.	Urban	642	2	7	41	44	46	47
V	San Antonio	Mun.	Urban	518	3	8	46	56	56	57
IV	Chañaral Alto	Mun.	Rural	681	4	7	55	62	67	57
II	Taltal	Mun.	Urban	1 110	2	5	53	64	64	60
Well performing schools[d]										
X	Quicavi	Mun.	Rural	...	3	6	55	...	68	70
V	San Antonio	Mun.	Urban	1 158	1	6	54	67	68	..

[a] P900 = Programme to improve the quality of schools in poor areas.

[b] Average of mathematics and Spanish scores.

[c] Quintiles 1 to 5 according to the vulnerability index used by the Junta Nacional de Auxilio Escolar y Becas (National Student Assistance and Scholarship Board) or JUNAEB.
1 = Lowest vulnerability (0-32)
2 = Low vulnerability (33-44)
3 = Medium vulnerability (45-56)
4 = High vulnerability (57-66)
5 = Very high vulnerability (67-100)

[d] In San Antonio, a contrasting, well performing school that had recently graduated from the P900 system and was just a short walk away from the under-achieving school visited was selected as a comparator. A school visit to a successful, poor, rural boarding school in Quicavi, Chiloé, is also reported as a contrast to the under-achieving rural schools that were visited in regions IX and X.

IV

What schools teach us

What makes a good school? What does it take to make a good school in a poor community? Or conversely, what keeps a school from being a good school? Our school interviews bring many realities to light and drive home the truth that parents, educators and students know: one factor alone does not make the difference. Educating young people is a complex process; many factors come into play at school. The factors are additive: good teachers, an accomplished school principal, an effective curriculum, enough money to carry out programmes, well-fed children who are motivated and prepared to learn, parental involvement, good facilities, adequate classrooms, small class sizes, schools close to home, creative teaching, a stable student-teacher population.

These factors add up to bigger challenges in schools like the ones we are considering. It takes more effort to make a good school in a poor setting; it is a continuous challenge, renewed year after year. These schools were selected because they were not doing well according to standardized examination results, but each school has distinct factors at work and each has its own lessons to teach. While the lessons here apply most directly to under-performing schools in difficult settings, they also have meaning for schools at large. We can see that these schools are not all equally "poor" or equally "vulnerable", as they come from four out of the five levels of vulnerability measured by the national school feeding programme algorithm for allocating school lunches. Socio-economic vulnerability is only one of the factors governing school performance.

The reforms being undertaken by central authorities to improve education are medium- to long-term investments. At least five to ten years will pass before all schools see them functioning effectively. The effects of curriculum reform, teacher training and full-day education will take time to come through. In the meantime, focused efforts to improve the workings of schools are needed, within the existing parameters.

1. What schools teach us about teacher and student performance

The aim of the school visits was not a rigorous evaluation of classroom teaching per se. This would have required a specialized, in-depth study focusing on that topic alone and lasting for longer. Classrooms, especially fourth grade classrooms, were visited at all schools and some teaching was observed. In some classrooms students had been divided into groups, in others they had not. A lot of information emerged from the interviews with teachers, principals and students. There was a fair amount of rhetoric about child-centred learning, the result in part of current Ministry of Education policy recommendations to teachers participating in Ministry teaching improvement workshops.

The problem, of course, is to translate standards into practice. One teacher can indeed make a difference, even at a poor school. In 1992, for example, the fourth grade children at Taltal's Escuela Hogar turned in mathematics and Spanish results far higher than those of previous years (62 and 65 respectively out of 100), a result attributed to three particularly good teachers. In 1996, though, there was a drop of two points in the average score for Spanish and seven points in the score for mathematics, largely because the teachers had changed.

There is a clear difference in average age between teachers in municipal schools where they have a job for life and those in private subsidized schools where they can be dismissed. The high average age of teachers in many of the schools visited was striking. In Taltal the school principal said this was because he could not get new teachers to go to that remote place. Two of the teachers responsible for the commendable 1992 and 1994 scores had since retired and recruiting new teachers was a difficult if not impossible task. Taltal is a desert town of 12,000, a four hour bus ride south of the nearest city, Antofagasta. The town is isolated and most goods have to be brought in by truck, so the cost of living is high. These factors conspire to keep young professionals away. "If you advertise a job opening in Taltal nobody will apply. They all prefer the big cities," said former P900 supervisor Alfaro.

If some veteran teachers resist change, an equal number of them embrace it and use it to their advantage. Teachers responsible for first to fourth grade students in Taltal put together a project for an audio-visual room that won funds from the Ministry of Education. Because the project was devised by the teachers themselves, they also make more frequent use of this facility and have integrated it into their lesson plans. Popoén's teachers credit the school's impressive performance in science to the frequent use of educational videos, which are shown on a video cassette recorder and television obtained through a PME (Proyecto de Mejoramiento Educativo)[10] project grant.

Continuing education for experienced teachers is as important as changing the way new teachers are taught. Good videos of "ideal" classrooms and classroom teaching methods can be very effective in acquainting teachers and students with methods and practices that would improve their teaching and learning. These videos would be especially effective if they used real examples from poor schools and difficult settings.

However, large class sizes and overcrowding stood out as a major challenge to even the most innovative teacher. At the successful Portuarios school in San Antonio, the most serious problem today is the growing demand from parents wanting their children to study there. Teachers fear this could hinder the performance of the children. There are too many classes with 45 students, which hampers their ability to give the interactive classes they consider best for learning. It is also virtually impossible to bridge the differences between slow and advanced students. Very large differences in the quality and quantity of classroom learning materials, textbooks and student notebooks were readily evident, even among these troubled schools. Some schools and classrooms were especially deficient; this was the case, for example, at the Chañaral Alto school, which is not even one of the schools with the highest vulnerability level. The poor quality of students' notebooks and the individual work in them was striking. In some cases, the work was barely legible.

[10] The Proyecto de Mejoramiento de Educación (Educational Improvement Project) is a three-year Ministry of Education grant awarded for innovative projects to improve the quality of teaching.

2. What schools teach us about lack of parental involvement

Lack of parental involvement was a problem in every struggling school. Although this is not a new discovery, the specific examples cited by those interviewed are certainly instructive and shed light on the depth of the problem in poor families.

The key to the seeming contradiction between innovative educational projects and poor scores in the national SIMCE tests at the Trangol school lies within the student body itself. Almost 100% of the children are full-blooded Araucanian Indians who speak virtually no Spanish when they enter the school for the first time. Their parents enrol them more for the daily school breakfast and lunch than for the food for thought they might get during class. This is understandable considering the minimal education of the parents themselves. On average, the men have just four years of formal schooling, and half the women are "illiterate from lack of use" of reading and writing skills. These parents seldom take any interest in their children's class activities and sometimes do not even know what grade their offspring are in. When a parent-teacher meeting was held recently at the school only 10 out of 68 parents bothered to turn up. "I've never had a parent come to me and ask me how his child is doing in school. Never," said Mary Torres, who has taught at Trangol for nine years and is currently in charge of first and second grades. "We get no reinforcement at home of what they are learning. One day the kids know it and the next day they forget."

With an average of 3.5 years of schooling in Popoén, parents take little or no interest in their children's class activities. "The children here have a tremendous lack of affection and that affects their ability to learn," said their principal. The school bought a school bus to pick up weekly boarders each week and drive them back home every Friday and this has raised attendance considerably.

Most students who attend Taltal's Escuela Hogar do not receive sufficient support or reinforcement at home for what they are learning at school. Some of the older boys have to alternate between jobs and classes, working one day and going to school the next. "There is a lot of social work involved," said eighth grade teacher Rosa Ovalle Fernández, who has taught at the Escuela Hogar for 16 years.

Trifeña Tarita Chirino is a fourth grader who reads with a fluency appropriate to her nine years, despite being one of 17 brothers and sisters who work collecting and selling seaweed. Her teacher says she is enthusiastic about learning and will sometimes knock on the door after school hours to ask for a pencil or for help with a question. "I talk to Trifeña's mother and tell her to help her daughter, but it is as if I were speaking a different language," said teacher Patricia Jiménez Rojas. Trifeña's grades, which average 4.4 out of 7, reflect the lack of parental concern. Yet in the same class, Cristián Astudillo Collao boasts grades averaging 6.2. Happy and confident, the nine-year-old announces he will be a palaeontologist when he grows up. His father works in a thermoelectric plant.

After years of fending off teacher complaints about the composition of their classes, the Escuela Hogar's principal changed the system used for deciding the makeup of each class. When parents arrive to register their children for school, they are told to select the teacher who will accompany their child from first grade to fourth. If a particularly good teacher's class fills up quickly, parents will have to settle for a different teacher. Those who carry out the registration process last will most likely get the worst teachers and condemn their children to mediocre teaching for four straight years. So in the end it is the children with parents who do not fully understand the value of education that often pay the price of the school's reluctance to take responsibility for the makeup of classes.

This unfair system enables the principal to avoid complaints and theoretically provides a motivation for bad teachers to reform. "We do this precisely so that the teacher will improve his teaching, because there shouldn't be any mediocre teachers," said Rojas. Unfortunately, he admits, there are teachers who do not care if they are chosen last, so in practice the incentive does not work. If, however, a child is lucky enough to have an excellent teacher from first to fourth grade, that child is likely to carry on being a good student in fifth grade and beyond under a normal "one teacher per subject" system.

Changes in disciplinary procedures at the big-city Unidad Divina school in the poor section of La Florida, a large district in the nation's capital, Santiago, sparked clashes with parents, who tend to be aggressive and take little responsibility for the education of their children. "The parents have a very convenient view of their children's education. They expect the school to teach everything from toilet training to academic content," said the principal. There has been no centre for parents at the school since the old one was closed. Ramón, an eighth grade teacher, considers the lack of parental support one of the school's most serious problems. "There is no

commitment on the part of the parents, the children only get what you teach them in school."

Most parents do not participate in school activities at San Antonio's San José Calasanz School. It is not uncommon for them to send their children to work in the market, watch over cars or beg in the streets instead of going to school. Many of the children arrive without school equipment and teachers have to provide it. One teacher recalled students whose mothers never came to pick up the schoolbooks sent by the Ministry of Education. "I gave them directly to the kids, we couldn't continue to wait for their parents," he said.

Five minutes away from the struggling San José de Calasanz school, the Movilizadores Portuarios elementary school 479 in San Antonio boasts such a good reputation and attracts so many parents that its only serious problem is finding enough room for all its students. This school proves what can be achieved when administrators and parents work together and reflects the commitment of upwardly mobile, more highly educated parents from a higher socio-economic level. Parents of children at the school generally have an education that falls short of high school completion, although some have studied at university. Family life is stable, with three quarters of the students' homes composed of both parents and siblings.

The parents' centre also works actively with the school and maintains an excellent relationship with staff, who appreciate its efforts. These efforts have raised funds to improve the floors, buy books for the library, finance a new ball court, build bathrooms for the kindergarten and cover the play area with concrete. Parents have also bought a photocopier and currently pay assistants to clean the classrooms.

In return, parents expect the teachers to provide a high standard of education to their children in the classrooms. They are very interested in the school's SIMCE test results and many of them are willing to help the school with time as well as money. Some work as workshop monitors, others volunteer for special projects. Last year they worked on three special projects in the kindergarten, focusing on the family, the month of the sea and national holidays. All subjects taught in the classroom echo the chosen theme and parents pitch in with family anecdotes and work with children and school monitors to build models and displays.

V

Lessons learned

The school interviews tell us very clearly that while quality factors are additive, individual factors can make a difference, either for better or for worse. These factors are the critical ones to identify and understand because they are the ones that need to be acted on in the short term. What the school stories tell us, reinforcing international experience, is that the single most important factor at the school level is having a top-notch principal with the authority to act. Our school experiences make it crystal clear that a stable, qualified, motivated teaching staff is the lifeblood of a good school. They demonstrate that a skilled and dedicated teacher makes a measurable difference in student outcomes. By contrast, high teacher turnover and low teacher qualifications and interest immediately result in lower student performance.

The central problem is to attract and retain qualified teachers and talented principals in poor, remote areas of Chile and difficult inner city schools. Financial incentives are not enough. They do not address the desire of most people to live near their families and friends. Young teachers just starting out are motivated and not yet tied down to family responsibilities. They are in a position to move to communities in need, although they cannot be expected to stay there for the long term, perhaps not for more than five years. In return, they could be granted scholarships for advanced study or other incentives which would compensate them for their contribution to poor communities and poor students and would also be a further human capital investment in Chile's future.

But how can these lessons be put into practice? Educational authorities could institute school management reviews, like the ones that have been carried out here, to identify significant problems and practices that can be put right. While quantum leaps in quality are not realistic in most settings, finding and correcting one or more acute problems can make an important difference to children's learning, as the school audits demonstrate. In Chañaral Alto it is getting teachers to stay,

in Taltal it is negotiating with the mayor, changing the school principal and sorting out school financing, and so on. Let us review the lessons from these schools in difficult circumstances, lessons that reflect their struggle to raise student achievements.

1. Achieving educational quality: a renewed challenge every year

Schooling in poor neighbourhoods provides the biggest challenge to school officials and students. Using trends in SIMCE scores to measure success can be misleading because the assumption is that they should continue to rise as special attention and special inputs are directed at the school. With good teaching and good school direction, test performance should go up. It will not necessarily do so, however, because each year a new cohort of kindergarten or first grade students starts afresh and presents school authorities with the same challenges all over again. This is important when it is considered that as much as 60% of achievement is attributable to the social context in which children grow up, out-of-school factors like the home environment and parental support or lack of it. "The household's educational climate (years of education of the adults in the household) is the most important factor and accounts for between 40% and 50% of the socio-economic and family factors."[11]

If the characteristics of the student population changed markedly from year to year, this would affect potential school achievement results. In most cases, the student population probably does not change that much and so teachers face similarly large challenges every year. In a sense, though, SIMCE performance is misleading. The biennial tests taken by fourth grade students are an independent event each time and it is a fresh set of students that is being tested. Therefore, trends in SIMCE scores are not a very accurate measure of whether a school continues to need compensatory intervention programmes such as P900 or is ready to graduate from them. (Subsequent to these school reports, P900 introduced additional qualitative factors into the criteria for deciding whether a school is ready to graduate). A school may have become successful after participating in the programme for a few years, and the SIMCE results may reflect this. But is that the right time to leave or is it better for the school to stay in and help a new cohort of first grade students receive a higher quality education? Why should schools be expected to perform as well when their resources are being reduced?

2. Achieving educational quality: making improvements sustainable

To graduate from P900, schools need to undergo a fundamental change in the way they do business. School administrators and teachers, and not just students, need to learn from the programme. P900 must find ways to provide sustainable inputs so that the school can manage on its own better than it had been doing before it participated in the programme. It is the school that should be tested, not just its students, to monitor what it has learned. The fact is that P900 is only one complementary programme with limited resources. Probably, and the school stories bear this out, it is school-wide factors that matter when it comes to sustained improvement, and not special programme factors. P900 has provided excellent materials to stimulate teachers and students, and its school management and outreach strategies are valuable. They may not, however, be sustainable.

Overall test scores do not tell the whole story either. In each and every school visited, even the poorest and most backward, some children stood out; they hungered for knowledge and were getting as much as they could from what the school offered. At the San José de Calasanz School in San Antonio, it was possible to identify a large of number of students with learning problems who needed remedial help. The school was doing its best to attend to these children. Side by side with them, though, were others who were being challenged in the classroom and by special programmes and after-school activities such as the school newspaper. The school had many sponsors from the community who gave their money, their time and their skills to make the school better.

3. What makes a good school: it's the school principal

The single factor that seems to matter most is the school principal. The school principal can turn a school around. The changes introduced by Dora Muñoz at Unidad Divina school in Santiago's La Florida district have taken three years to make a difference, but they are beginning to pay off, as the SIMCE 1997 eighth grade test results showed. She has wrought a transformation in her poor, difficult, overcrowded school, changing everything from the teachers to the level of hygiene. Another example is Elsa Carrasco, principal of San

[11] See World Bank (1995), Carlson, ed. (1999), ECLAC (1998) and Cohen, ed. (1998).

Antonio's San José de Calasanz Elementary School, whose dedicated, creative, entrepreneurial drive has overcome adversity, making her school a centre of her community and a place where children of all abilities are challenged. Again, after two decades Ivan Rodríguez Mercado, the principal at Trangol, continues to make his tiny, remote school a warm and welcoming learning experience for its ultra-poor children.

But leadership was clearly missing in Taltal's Escuela Hogar, and this was due as much to the authoritarian mayor as to the tired school principal. Chañaral Alto's Alejandro Chelén Rojas Elementary School awaits a new school principal and in the meantime Claudina Rodríguez, filling in as temporary principal, has her heart in the right place and gives of her best, but is clearly handicapped by the lack of mandate. What the Chañaral Alto school needs to shift gears is a tough, dynamic leader who can turn the teacher situation around.

An important change that Quicavi's innovative principal introduced was the idea that all teachers should share in school administration. "When you share the responsibilities and decision-making, you get a more committed staff," he says. "It's democracy." Out went the heavy rote learning that had previously typified the school's teaching. In came more discussion, explanation and discovery. The PME school programme paid for teachers to get special training in using the school's new equipment, and in such subjects as speech skills.

The school's low results in national testing began to show a steady improvement. Class repetition fell from as high as 25% to 1%. For the first time Aquelarre School in Quicavi on the island of Chiloé had no dropouts. Pérez credits his staff of seven teachers with the school's turnaround. "Once we got beyond some initial resistance to giving up old [teaching] ways, everyone adopted the project like a team, and we found we could have fun while doing a better job," he says. Teachers take it in turns to live at the school for a week at a time to supervise boarders. It makes for long days, but both teachers and students mention the sense of community when listing the school's strong points.

Pedro Martínez, Provincial Department Head for the Ministry of Education in the X Region, believes that the key ingredient in making a good school is the principal. "The success of a school depends upon the leadership of its principal. If you have a good principal, you will attract good teachers who will put together good projects to win good grants," concluded Martínez.

Incentives are needed to attract more dynamic leaders to work as principals, especially in these tough schools. It is really no different from turning around a failing company. Why not actively search for school managers with entrepreneurial, managerial and people skills and give them the authority they need to make a good school? It is clear that the quality of the students entering schools is not going to change significantly until the problems of inequality and poverty are addressed, and these are long-term problems. In the meantime, the school system can confront the special challenge of difficult schools by allocating its best leaders to them.

4. *Jornada completa*: full-day schooling

It should be remembered that the school visits were being carried out while many of the educational reforms referred to earlier were at the implementation stage, and while it is anticipated that these reforms will result in a higher quality of education, this will take time. When this process is going on it can be disruptive as well as helpful. The move from half-day to full-day education means in practice that many schools have to find two or even three times the physical space to implement this reform. It is not just a question of financing. In many poorer schools like the ones in this study, there is simply not enough space left in the current physical premises. These schools are already overcrowded after many years of growth within the same infrastructure. The logistics of giving over the available space to one shift means that, as a minimum, the number of classrooms has to be doubled. In most of the schools visited this was not feasible. The municipalities are having to search for alternative sites and the logistics of implementing the change has wide-ranging implications for other school inputs such as teachers, recurrent costs and the building of new premises which old schools are not able to accommodate. There is now a special Ministry programme to help schools solve these problems.

5. Accountability

The quality of education in schools is suffering from an almost total dependence on outside decision-making and outside financing by three principal actors: the Ministry of Education, the provincial department and the municipality or private administrator. The bulk of financing continues to come from the central authorities in Santiago in the form of a subvention or payment per child. This is calculated on the basis of monthly attendance records and handed over to the municipality to administer. The municipalities manage the schools

and are expected to provide additional financing for equipment and school operations. The Ministry of Education in Santiago is responsible for curricular and pedagogical aspects. The provincial departments supervise the implementation of Ministry programmes by schools.

There needs to be more coordination and accountability among these three actors. At the moment, schools are being "graded" only on their SIMCE performance. In large part school SIMCE performance is determined by the quality of school staff, i.e. teachers and administrators in the schools. However, decisions about school staff are not made by schools but by the local municipal authorities. Where is the municipality's grade? Somehow the linkage between the school, the municipality, the Ministry and the provincial authorities needs to be improved, and some checks and balances instituted.

6. High student-teacher ratios

Under Chilean law, schools can assign as many as 45 students to a classroom and receive a subvention for each of them; there is no subvention for students above 45. Schools thus have a very powerful economic incentive to have classes as close to 45 as possible. How can one teacher manage a class of 45 students and provide them with a high-quality education? Certainly it is not optimum. By way of comparison, the average class size in private schools throughout the country is 24 students per teacher, as against 38 for all private subvention-funded schools and 35 for all municipal schools.[12] This problem was particularly noticeable in poor private subvention-funded schools, schools that are privately owned but which receive the per capita student subvention. A case in point is the Unidad Divina School. Because of its limited resources, it depends heavily on the subvention to pay for its major operations, and especially to fund reasonable salaries for its teachers. Consequently, the teachers themselves, together with the administration, went on a campaign to recruit more students. The Popoén school generally operates at a loss, according to its owner, who had to return to teaching at the school to save on the salary of another teacher.

How does this stack up with international experience and knowledge? There has been much debate about class size because of the high cost of smaller classes. There are a range of views on the subject and the evidence is different for different levels of schooling. Hitherto, small class sizes have tended to be regarded as inappropriate, at least for "developing countries", because they are not cost-effective.[13] This general guideline does not discriminate sufficiently between different developing countries, however, and while it may be a reasonable prescription for very low-income countries, it is not necessarily the right one for others, like Chile. Furthermore, why is it necessary to apply class size rules across the board?

There is much new evidence regarding the cost and effects of class size reduction (CSR) and much remains to be learned.[14] To judge by short-term effects at least, CSR prompts significant academic improvement. In class size experiments in the United States, the effects on minority student were double those on white students. Most improvement was shown during kindergarten and first grade. The long-term effects are harder to gauge because other factors make it difficult to isolate the results. Care also has to be exercised with the definition of small and large classes. In the United States, where much of this research is carried out, small is very small in Chilean terms (less than 20 students per class as compared with more than 20, for example). As would be expected, the results of current research show that the opportunity costs of giving students individual attention are greater in large classes, and with a smaller number of students the teacher is able to spend less time on discipline and more time on instruction. In a smaller class, the teacher is able to give more individual instruction, usually to those students who do not have parental support at home. Low-income and minority students benefit the most from class size reduction.

In some East Asian countries such as Japan and Korea, CSR does not produce the same results as in the United States. The Third International Mathematics and Science Study (TIMSS) shows that while class sizes are large in these countries, students' academic performance is also high. However, teachers in Japan teach their students by lecturing and the lectures are the same regardless of the number of students in the class. In Chile, education reform is aiming for a switch from the "frontal" approach to "interactive" teaching, requiring more individual attention.

Parental involvement is crucial for successful learning, especially when class sizes are large. Even with a class of less than 20 students, a teacher can spend only

[12] See Chilean Ministry of Education (1998).

[13] See Lockheed and Verspoor (1991).

[14] See Grissmer (1999).

a limited amount of time on each student. Parents can easily spend more time with their children. However, students from poor families do not receive parental support and schools are being called upon to make good this deficiency in the transition from home to school, especially in the early years of education. There is evidence of significant short-term achievement gains in the first four years of school with CSR.

7. Overcrowded classrooms

How can quality learning take place when large numbers of students are packed into small classrooms? Crowding was found in a number of the schools visited, but it was particularly evident as a serious problem at Unidad Divina School located in the commune of La Florida in Santiago. Forty or more children were packed into the small classrooms and seated so close together that they were literally "shoulder to shoulder". This problem was exacerbated by the move to full-day schooling, as some classes were now operating throughout the day and displacing other classes that would otherwise have used the same rooms in the afternoon shift. In Taltal's Escuela Hogar, 40 plus children were stuffed into classrooms designed for no more than 35 children. Overcrowding was observed in all but the smallest schools.

8. Teacher turnover, teacher qualifications, teacher involvement

Chañaral Alto's Alejandro Chelén Rojas Elementary School shows us how much teachers do matter. Its children are starved of teacher involvement. Children must question their own worth when they experience their teachers' lack of commitment, watch them rush off at the end of the day for the long drive back to civilization in the nearest big town, call in sick as often as possible or quit as soon as they can. Only 13 of the 26 teachers currently live in Chañaral Alto, the rest commute. The SIMCE scores for the fourth grade plunged in 1996 because that cohort went through 12 different teachers in a four year period. Those in eighth grade, meanwhile, had had just one excellent teacher from first grade to eighth and their 15 point increase in SIMCE scores reflected that. Because of the difficulty of finding teachers, 11 out of the 26 lack degrees. None of the seven new teachers has one. The school has had three principals within the space of a year and the position is vacant again. This is clearly a disaster that needs to be sorted out. If the school cannot keep teachers then why keep the school in the town? Why not transfer the school to the nearest large community and bus the children in? The cost-benefit implications and impact of such a change warrant consideration.

The Chañaral Alto example may be representative of an underlying problem worth investigating further: the problem of getting good teachers for rural schools that are too remote for convenient travel but not so distant that teachers would choose to live in the community.

At Unidad Divina School in the Santiago district of La Florida, the principal thought that her team of teachers had learned to work well together and was happy that teacher turnover had decreased. Being private, the school could change its teachers, unlike municipal schools where the teachers' union and the law strictly regulate teacher contracts.

Most of the 16 teachers at Unidad Divina came from professional institutes. Almost all the teachers spent the entire day at the school, since their contracts stipulated a working week of 44 hours. Teachers earned a modest basic salary, but the school had begun awarding bonuses as an incentive for efficient and effective teachers. While the teachers appreciated the principal's efforts and the ease with which they could get their new projects approved by her, low wages continued to be a source of frustration, particularly when higher qualifications did not translate into higher salaries. "It doesn't pay to get extra training," said Ramón, who said the school only provided a small part of the financing for his graduate degree in counselling and did not raise his pay after these additional studies.

9. School financing: a case of reverse targeting

The Taltal School provided a major insight into how educational reform can work in practice or, in this case, not work in practice. The Taltal School was visited because it was an instance of a very large school whose performance had improved, stagnated and then started to slide back, in spite of P900 and other project and programme interventions. The Ministry had conjectured that it was in large schools that it was likely to prove especially difficult to achieve sustained improvements. At the same time, the Taltal School is not a particularly poor school as measured by the JUNAEB vulnerability index used as a basis for allocating school lunches. On a scale of 1 to 5, the Escuela Hogar scored 2, placing it in the low vulnerability category. The physical infrastructure and the children seen during the visit appeared to be in better condition than at any of the other six under-performing schools visited.

It transpired that the local mayor, who had the authority to decide how the municipality's school funding would be spent, elected to take funds from the poorest and biggest school in his town, the Escuela Hogar, in order to pay for the operations of the secondary schools and night schools, which were operating inefficiently owing to their lower enrolment rates and unreliable attendance. The Escuela Hogar, with its 1,110 primary students and compulsory attendance, was generating a reliable flow of income, but part of this was being transferred away to finance the rest of the system. Meanwhile, the school was lacking in basic infrastructure; there were not even enough chairs in the canteen.

This case perfectly illustrates the importance of studying micro as well as macro performance; the need to observe the "how" at first hand, and not just rely on the facts that reach the top. Without this local information, the normal assumption would have been that child-based subventions to schools would be spent as they were allocated in the schools for which they were intended. It may also help to explain why some senior Ministry of Education officials were of the opinion that the serious "hard cases" were the very large schools. There may be other examples of municipalities reallocating funds from larger primary schools to cover the costs of smaller schools, more expensive secondary schools and schools where attendance is not mandatory and is therefore irregular, resulting in lower subventions. What with the current recession and economic crisis, municipalities are seeing their budgets cut even further and this practice may well become more common. It is truly a case of reverse targeting.

10. Special programmes competing with the basics

Many schools are receiving special programme inputs designed to improve the quality and relevance of education. In addition to P900, most of the schools visited had won PME (Educational Improvement Project) funding. In 1995, 736 project grants were awarded through primary school competitions in a range of learning areas: language, subject integration, social integration, mathematics, natural sciences, social sciences, art and physical education. The equivalent of over US$ 4 million was awarded to primary schools, giving an average of US $6,000 per school in current dollars, for projects lasting two to three years. The overwhelming majority of these grants, over 60%, were awarded in the language area. A typical example is the television project won by the Quicavi School in Chiloé, which was so instrumental in bringing learning alive for those students.

While these projects and programmes provide enriching opportunities for students, they also compete for the time and attention of teachers and administrators. More than one school remarked on this conflict. In Chañaral Alto, for example, the school with the most serious difficulties in attracting and retaining qualified teachers and staff, school officials, while very proud of their PME project, also expressed concern about the less than optimal implementation of P900 due to the time demands of the PME and other projects. Winning the PME project involved setting aside time to write up the proposal and, when the award was made, spending time implementing and supervising it. In addition, schools receive a number of different special programme inputs for which they must compete. This is not to say that these are not useful projects and programme inputs, but there is a resource cost involved.

The innovative Enlaces project to give students hands-on experience with computers is another example. The project requires a special secure, dedicated room. Teachers must be trained first to use the computers and then to train and supervise their students. At the Unidad Divina School in La Florida, the library had been sacrificed to the Enlaces project since there were no spare rooms available. The impression that one is left with is of a two-tiered quality effort: innovative projects on the one hand, but failure to get to grips with classroom basics on the other. In Taltal, the Escuela Hogar was long on frills and short on the basics, with computers still standing boxed up and donated laboratory equipment proudly displayed in the multimedia room while children were following what for the most part was the same old routine in the classrooms.

11. "Home" work or supervised exercises at school?

Homework may be set, but it is very difficult for many poor students to find a quiet place to work at home. Many households have no private areas. Instead, children probably have to share the dining room table with other family members while they are watching television or talking or entertaining friends. Parents with little education are less prepared to support their children and less aware of how to go about it, homework being a case in point. Ramón, an eighth grade teacher at the Unidad Divina school in La Florida, Santiago, considers this a serious problem: "At home their school bag gets thrown in a corner, they don't open it, and in most cases they have nowhere to study. If they do try to study, it is at a

table with a radio on, a television blaring and a bunch of kids yelling." This type of comment was echoed in most schools with achievement problems, while in the "successful" Movilizadores Portuarios school in San Antonio parents hold the teachers to high standards and are very interested in the school's SIMCE results. They give their time not just at home but in the school, working as workshop monitors and volunteering for special projects. Rather than complaining about these hard truths, a more constructive solution could be to provide a "home" work setting at the school and carry out supervised exercises in homework rooms after hours.

12. What should be done about textbooks?

Textbooks give concrete expression to the curriculum and enable students to study independently. Each year the Chilean government invites tenders for the provision of school textbooks for children in State-supported education, who account for over 93% of total enrolment in the country. The unsatisfactory supply of textbooks is still a serious handicap to quality education and further efforts to improve the quality of textbooks are needed.

Teachers frequently complained that they did not have enough textbooks, and that those they did have were of poor quality. When the Ministry of Education sends out questionnaires on which textbooks teachers wish to receive, Ovalle Fernández, a teacher at the Escuela Hogar in Taltal, makes her choices carefully, but to no avail. "We always choose the best and we always get whatever is available," she complained. A teacher at the San Antonio Movilizadores Portuarios school said "I was furious when I discovered that the language book from the publisher Arrayán supplied by the Ministry is sold in bookstores with a workbook that we never get. So that means we are already at a disadvantage before we even begin." Some teachers review the new school texts every year then buy the most useful ones with their own money and photocopy them for their students, charging only for the photocopying.

Although textbook evaluation was not the focus of this study, the issue was looked into. Whereas in 1990 many children had to share textbooks, in the ten years since then the Ministry of Education has tripled the number of textbooks provided to schools and has stated that in the school year beginning March 2000 all students in basic education will have their own textbooks. Efforts are also under way to improve textbook quality in connection with the curriculum reform.

Given the centrality of textbooks to educational outcomes, why are they not better and what needs to be done to change the situation? A big research study by the Centro de Estudios Públicos (Centre for Public Studies or CEP) provided an in-depth assessment of the quality of textbooks being used in Chilean schools receiving government subventions.[15] The CEP study put together two commissions: one to evaluate mathematics texts and another to evaluate Spanish language textbooks. The expert panel included people from rich, middle class and poor backgrounds, university teachers, users of mathematics and Spanish texts and school principals. They agreed that Chilean textbooks did not measure up to the foreign textbooks from countries like Spain and England that were used for the purposes of comparison, and came up with conclusions and proposals regarding language and mathematics texts.

Textbook reform could be a relatively quick way to make an impact on education quality at the student level. Good textbooks can produce immediate improvements in classroom and personal learning. There is not much in the way of choice among the texts available on the market. However, the Ministry is evaluating the bidding process and the texts being used. This is very welcome, but the critical issue remains that Chilean texts are below international standards and there cannot be a real change in the near future unless the basic issue of standards is addressed. As basic education is undergoing curricular reform, an accompanying textbook reform is an urgent priority.

[15] See Eyzaguirre and Fontaine, eds. (1997).

VI

Conclusion

The many lessons learned from the in-depth school visits will be directly relevant for a significant proportion of the country's subsidized primary schools and will be very important for improving the quality and equity of primary education. The school interviews show that while quality factors are additive, some individual factors make a great difference. These factors are the critical ones to identify and understand because they are the ones that need to be acted on in the short term. The school stories show that the most important factor at the school level is having a top-notch principal with the authority to act. They also show that a stable, qualified and motivated teaching staff is the lifeblood of a good school and makes a measurable difference to student outcomes, whereas high teacher turnover and low teacher qualifications and interest immediately result in lower performance. The central problem that faces us is to attract and retain qualified teachers and talented principals in poor or remote areas of Chile and difficult inner city schools.

Bibliography

Angell, A. (1996): Improving the quality and equity of education in Chile: The programme 900 escuelas and the MECE-básica, A. Silva (ed.): *Implementing Policy Innovations in Latin America: Politics, Economics and Techniques*, Washington, D.C., Inter-American Development Bank (IDB).

Carlson, B. (2000): *Achieving Educational Quality: What Schools Teach Us*, Desarrollo productivo series, No. 64, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), January.

Carlson, B. (ed.) (1999): *Social Dimensions of Economic Development and Productivity: Inequality and Social Performance*, Desarrollo productivo series, No. 56, Santiago, Chile, ECLAC, August.

Carnoy, M. and P. McEwan (1997): *Public Investment in Private Schools: A Reconstruction of Educational Improvements in Chile*, Stanford, California, Stanford University.

Chile, Ministry of Education (1996): *Compendio de información estadística 1996*, Santiago, Chile, Department of Statistics.

_____ (1998): *Compendio de información estadística 1998*, Santiago, Chile, Department of Statistics.

Cohen, E. (ed.) (1998): Educación, eficiencia y equidad: una difícil convivencia, *Educación, eficiencia y equidad*, Santiago, Chile, ECLAC/Organization of American States (OAS)/Ediciones SUR.

Cox, C. (1997): *La reforma de la educación chilena: contexto, contenidos, implementación*, Documentos PREAL, No. 8, Santiago, Chile, Partnership for Educational Revitalization in the Americas.

ECLAC (1998): *Social Panorama of Latin America, 1997*, Santiago, Chile.

Espínola, V. (1996): *Revisión de quince años de política educativa en Chile: ajustes en función de la equidad*, Santiago, Chile, ECLAC.

Eyzaguirre, B. and L. Fontaine (1999): *¿Qué nos dice el SIMCE de 8° Básico? Análisis y perspectivas*, Documentos de trabajo series, No. 294, Santiago, Chile, Centre for Public Studies.

Eyzaguirre, B. and L. Fontaine (eds.) (1997): *El futuro en riesgo: nuestros textos escolares, 1997*, Santiago, Chile, Centre for Public Studies.

Gajardo, M. (2000): *Reformas educativas en América Latina. Balance de una década*, Partnership for Educational Revitalization in the Americas paper, No. 15, Santiago, Chile, Partnership for Educational Revitalization in the Americas, January.

García-Huidobro, J. (1999): *La reforma educacional chilena*, Santiago, Chile, Editorial Popular.

García-Huidobro J. and C. Jara (1994): El programa de las 900 escuelas, M. Gajardo (ed.), *Cooperación internacional y desarrollo de la educación*, Santiago, Chile, Ministry of Planning and Cooperation, International Cooperation Agency/SIDA/Centre for Educational Research and Development.

Grissmer, D. (1999): *Seminar on Class Size Effects: Assessing the Evidence, its Policy Implications, and Future Research Agenda*, Washington, D.C., RAND Corporation, September.

Lockheed, M. and A. Vespoor (1991): *Improving Primary Education in Developing Countries*, Washington, D.C., World Bank.

Martínez, R. (1996): La prueba SIMCE y la medición de la calidad de la educación, *Educación, eficiencia y equidad*, Santiago, Chile, ECLAC/OAS/Ediciones SUR.

Mizala, A. and P. Romaguera (1998): *Desempeño escolar y elección de colegios: la experiencia chilena*, Working documents, Economía series, No. 36, Santiago, Chile, University of Chile, Department of Industrial Engineering, Centre for Applied Economics.

National Student Assistance and Scholarship Board (1998): *JUNAEB, Red nacional de apoyo al estudiante, programas 98.99*, Santiago, Chile.

Olivares, J. (1996): Sistema de medición de la calidad de la educación en Chile: SIMCE, algunos problemas de medición, *Revista iberoamericana de educación*, No. 10, Madrid, Organization of Ibero-American States for Education, Science and Culture.

Partnership for Educational Revitalization in the Americas (1998): The future at Stake, Washington D.C., Inter-American Dialogue, April, *mimeo*.

Rojas, C. and J.M. Esquivel (1998): *Los sistemas de medición del logro académico en Latinoamérica*, LCSHD paper series, No. 25, Washington, D.C., World Bank, Latin American and Caribbean Regional Office, October.

Schiefelbein, E. and P. Schiefelbein (1998): Repetition and quality of education in Chile, L. Randall and J. Anderson (eds.), *Schooling for Success,* New York, Sharpe.

Undurraga, C. (1998): Reforma educacional en Chile: perspectiva de cinco ministros, Washington, D.C., IDB, *mimeo*.

World Bank (1995): *Priorities and strategies for education*, Washington, D.C.

_____ (1999): *Educational Change in Latin America and the Caribbean,* World Bank strategy paper, Washington, D.C., Latin America and the Caribbean Social and Human Development.

Static and dynamic *effects of Mercosur.* The case of the *footwear sector*

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The static effects of trade creation or diversion are generally held to be the essential variable for evaluating the costs and benefits of regional integration. However, it is the effects of a dynamic nature that provide the most convincing arguments in favour of integrating economies rather than opening them up unilaterally. The difficulties involved in measuring these effects make it necessary to isolate aspects that can provide a basis for analysing the changes undergone by the different production sectors and the consequences of these for the levels and types of industrial organization, business strategies, technological modernization and the regional dynamic, among other things. The footwear sector is very useful when it comes to analysing the effects of subregional integration, as it is a sector that displays rising trade flows within and outside the area, with small and medium-sized enterprises (SMEs) playing an important role. It forms part of a larger production chain, and its competitiveness depends on systemic factors.

This article consists of five sections. Section I describes the main characteristics of the footwear sector. Section II analyses the regulatory and microeconomic policy framework within which the sector operates nationally and subregionally. Section III describes the structure and performance of the sector in the 1990s. Section IV analyses the static and dynamic effects that can be identified from statistical analysis and the fieldwork carried out in Argentina, Brazil and Uruguay.[1] Lastly, by way of conclusion, section V deals with the inherited and acquired advantages of the footwear industry.

[1] These studies involved conducting the same standardized interview with around fifteen firms from each of the countries concerned and with the main business organizations in the sector.

I

Basic characteristics of the footwear sector

The footwear industry is part of a production chain that begins with cattle rearing and leather production and then moves on to the industrial phase, which comprises three stages: the cold-storage plant and slaughterhouse stage, then the tannery stage and, lastly, the manufacture of leather goods, including footwear. If the footwear produced is not made wholly from leather, the manufacturers concerned are also linked with the rubber and plastics production chain. In addition, footwear manufacturing links back to a range of supporting industrial activities, among them the production and importation of footwear parts and components, cardboard boxes and machinery and equipment for the industry.

The output of the sector is not homogeneous. Not only is the product range highly varied (sports, formal or special shoes, shoes for men, women or children, shoes made entirely of leather, plastic or rubber or a combination of these, etc.), but within a single category of footwear products are differentiated by quality, brand, etc. This variety has led to considerable segmentation of the footwear market, which determines the characteristics of competition in the sector.

Price competition is very important, particularly where lower-quality footwear is concerned. With higher-quality footwear, product differentiation is the key factor. In the sports footwear category, brand image plays a fundamental role and advertising and marketing costs are consequently a central feature.

In the formal footwear segment economies of scale are not decisive (something that has not been changed by the technological innovations that are being introduced into the industry) and in many countries footwear production is carried out mainly by SMEs. Economies of scale seem to be more important in the sports footwear segment, so plants tend to be larger. Again, the importance of brands means that the world market for sports footwear is dominated by a small number of major international brands that supply the world market through their own production plants in different locations (often in countries with cheap labour) or through production and/or marketing licences. The same is true, to a lesser extent, in the higher-quality segments of the formal footwear category.

Since price is a crucial feature of competition in the sector, cost reduction is a key element in companies' competition strategies. Labour is a particularly important cost since, despite the introduction of new automated technologies, the production process is still labour-intensive. Consequently, the availability of low-wage labour has been a key factor in competitiveness for this industry and in the shift of production from developed countries to economies with low-cost labour (first Taiwan, the Republic of Korea, Hong Kong and Brazil then, in a second stage, China, the Philippines and Indonesia).

Similarly, the availability of raw materials (natural leather) of the requisite quality and price has been another determining factor for competitiveness in the industry, although it now seems to be declining in importance as characteristics such as quality, design, delivery times and production efficiency come to the fore, and as the variety and quality of leather substitutes increase (Da Costa, 1993).

From the technological point of view, the industry is highly diverse, and in many countries there are still a great many small firms using traditional technology. Nonetheless, there are certain innovations –computer-aided design (CAD) and production– that have become increasingly important to competitiveness and are being adopted more and more widely in the sector. In some market segments, such as women's footwear, that have a particularly wide and frequently changing model range, the introduction of CAD has enabled plants to achieve the flexibility of production needed to meet demand.

This paper is part of a wider project coordinated by the authors, the national studies on Argentina, Brazil and Uruguay having been carried out by CENES, FUNCEX (Centre for Foreign Trade Studies Foundation) and CINVE (Centre for Economic Research) respectively operating as part of the INTAL (Institute for the Integration of Latin America and the Caribbean) RedInt network of centres. The authors are grateful for the comments of one of the anonymous assessors working at the *CEPAL Review*.

II

The microeconomic policy framework

1. National trade and sectoral regulation policies

During the import substitution industrialization phase, the Mercosur countries, and particularly Argentina and Brazil, developed a vast range of promotional instruments that combined high rates of trade protection with special investment incentive regimes and, subsequently, with instruments to stimulate exports. In the late 1980s came the first signs of a strategy change in economic policy which was to take hold at differing speeds and with differing degrees of thoroughness in the various countries.

In the 1990s, moves towards greater economic openness in Argentina and Brazil began to result in a substantial reduction in the nominal and actual protection provided to the footwear sector. Despite these general tendencies towards rationalization and declining public-sector intervention in industrial policy, however, both countries still retain different policy instruments that have benefited the sector.

In 1994 Argentina established specific minimum duties for a range of sports footwear categories, and these were increased in 1995. In 1997 a safeguard clause providing for the application of specific minimum duties (from which the Mercosur countries are exempted) came into effect, and in November 1998 this was extended to provide for import quotas (if these are exceeded, specific duty levels double). Lastly, in 1999 Argentina tried to implement para-tariff measures designed to hinder imports, mainly from Brazil.

In the case of Brazil, incentives provided by the federal Government overlap with those of state governments, which have greater powers to provide tax incentives than do their Argentine counterparts. The federal Government has taken a range of measures to support the sector. Between 1995 and 1998, the National Development Bank (BNDES) set up an investment financing programme for the sector with a preferential interest rate. Meanwhile, the Brazilian Government began to make more active use of external trade policy. In 1995 it placed a large number of tariff categories relating to the footwear sector on the list of exceptions to the common external tariff, and a tariff of 31% was set for these, to be gradually reduced from 2000 onwards. In April 1997 the federal Government used Provisional Measure 1569 to place certain restrictions on import financing, although these were eventually eased somewhat for Mercosur members (exceptions were granted for imports of less than US$ 40,000 with a term of up to 89 days).[2]

2. Sectoral regulation and trade policies in the context of Mercosur

At the subregional level the relevant policy areas are connected with the movement towards subregional free trade in the sector, implementation of the common external tariff, the reduction or elimination of restrictions or taxes on exports of hides within Mercosur and the harmonization of incentive policies among member countries.

Trade liberalization within Mercosur is a relatively recent process. Right from the outset, many of the most significant tariff positions of Argentina and Uruguay were on their respective lists of exceptions to intrazonal trade liberalization and, once the Customs Union had been set up in 1995, most of these positions came to form part of their adjustment regimes. Thus, it was only in 1995 that a gradual process of intrazonal tariff reduction began in the cases of Argentina and Uruguay, a process that ended in 1999 and 2000, respectively. Brazil also created obstacles to intrazonal free trade, essentially by means of Provisional Measure 1569 of 1997 restricting import financing, which has already been touched upon.

The common external tariff for the footwear sector was originally 20%, a level similar to that of nominal tariffs in Argentina and Uruguay and slightly higher than the Brazilian tariff. However, the pressure of imports from outside Mercosur (mainly from South-East Asia) at a time of currency appreciation led the Governments of Argentina and Brazil to place a number of the sector's products on their lists of exceptions to the common external tariff (with a timetable for reducing duties that was to bring them into line with the common external tariff in 2001). In addition, Argentina has

[2] This measure would have had serious effects on Argentine exports, as was confirmed by interviews with the Chamber and with one of the companies exporting footwear to Brazil.

lodged a national safeguard clause against imports of footwear originating outside the area, something that has deepened subregional differences as regards external trade policy and benefited trading partners within the area. Thus, where the footwear sector is concerned Mercosur has not yet become a true customs unions.

One issue that has given rise to conflict and intense negotiations is the imposition by Argentina and Uruguay of restrictions and taxes on leather exports. The Uruguayan restrictions were eventually lifted, while in Argentina a timetable has been laid down for reducing intrazonal export duties to zero by 2000.

Lastly, there is still the crucial problem of regulatory discrepancies between the member countries of Mercosur. Harmonization of industrial policies within the area was laid down as one of the priorities in the 1991 Treaty of Asuncion, but very little progress has been made so far. Against this background, the noticeably more active approach being taken by the federal and state governments of Brazil (mainly through the fiscal battle to attract investment) would appear to be creating a highly asymmetrical context for intraregional competition. This situation has been instrumental in complicating relations between the employers' organizations of the member countries, which are characterized more by conflict than by cooperation. Meanwhile, the lack of harmonization in numerous areas of industrial policy is being compounded by non-compliance with community decisions already signed up to.

III

Structure and performance of the sector

1. Structure of the footwear sector in Mercosur

The Mercosur footwear sector is composed of a very heterogeneous collection of different-sized companies, a few large enterprises coexisting with numerous small and medium-sized ones (tables 1 and 2).

In the three countries considered the structure of this sector takes the form of a pyramid, with a large base of microbusinesses and small enterprises, a substantial number of medium-sized firms and a relatively small number of large ones (tables 1 to 5).

Leaving aside this similarity, there are large differences between the different Mercosur countries as regards the number of companies operating in the sector (8,500 in Brazil, 1,400 in Argentina, 117 in Uruguay) and in their size: the number of companies with more than 100 employees is 435 in Brazil, 30 in Argentina and just 2 in Uruguay.

In Argentina there is a clear distinction between the sports footwear and the non-sports footwear segments. The sports footwear segment is highly concentrated: at one extreme there are two big producers of branded sports footwear (Alpargatas Calzados S.A. and Gatic S.A.), whose various plants around the country account for 95% of all footwear of this type produced nationally (CLAVES, 1997). These companies are licensed by the main international brands (Nike in the case of Alpargatas Calzados S.A. and Adidas, New

TABLE 1
Argentina: Concentration in the footwear sector, 1993
(Argentine pesos)

Size of firm by gross output value	Number of firms	Percentage of sectoral output by gross value
Under 1 million	1.222	23
1 to 5 million	136	27
5 to 20 million	23	20
Over 20 million	7	30

Source: Prepared by the authors using data from the National Institute of Statistics and Censuses (1994).

TABLE 2
Brazil: Concentration in the footwear sector, 1995

Size of firm by number of employees	Number of firms	Total employees	Total turnover (millions of reals)
Under 10	6 334	16 174	266
10 to 49	1 387	30 874	438
50 to 99	344	24 200	349
100 to 249	259	40 535	644
Over 250	176	177 170	3 220
Total	*8 500*	*288 953*	*4 917*

Source: Correa (1999).

TABLE 3
Uruguay: Concentration in the footwear sector, 1997

Size of firm by number of employees	Number of firms	Percentage of total number of firms
Under 10	77	65.8
10 to 19	27	23.1
20 to 100	11	9.4
Over 100	2	1.7

Source: Laens, Osimani and Failde (1999).

Balance and Le Coq Sportif in the case of Gatic S.A.). In addition, Alpargatas Calzados S.A. has consolidated a brand of its own (Topper) which it sells not just in Argentina but elsewhere in Latin America as well. A third company (Unisol S.A.) produces sports footwear under the Puma and Lotto brands, although on a considerably smaller scale. At the other extreme, there are a number of small firms producing lower-priced sports footwear without international branding, which they sell in regional markets.

The non-sports footwear segment, which is subdivided by the type of user (men, women, children) and by product quality and price, is highly fragmented. There is just one leading firm (Grimoldi S.A.) which works with its own brands and foreign licences, but whose output is no more than 10% of that of the big sports shoe manufacturers. Besides this, there are a few medium-sized companies and a multitude of small ones whose gross output is less than five million pesos.

In Brazil, three big groups of companies can be identified in the footwear sector. The large producers (over 450 employees) specialize essentially in sports footwear and the bulk of their sales are in the domestic market; they produce under international licences and have a few brands of their own that are established in specific niches. At the other extreme, small firms and microbusinesses also operate in local markets, but use more artisanal production methods.

Lastly, medium-sized enterprises (between 50 and 449 employees) mainly concentrate on foreign markets and tend to be located in the state of Rio Grande do Sul, specifically in the Valle de Sinos region, which has played a vital role in the vigorous export performance of the sector.[3] Footwear production in this region was started off by a conglomeration of small firms focused on the domestic market. Over recent decades, this has turned into a group of different-sized companies that now export 70% of their output (Schmitz, 1997).

In Uruguay, there are just two big footwear producers (over 100 employees), which export most of their output (one concentrates on the United States market and the other on the Argentine one). Medium-sized and small enterprises basically produce for the domestic market and occasionally export.

2. Performance of the sector

a) *Production and apparent consumption*

In 1997, footwear production in the three Mercosur countries being studied was US$ 4.2 billion at current prices, of which Brazil accounted for 71%, Argentina for 24% and Uruguay for 5%. The sector has developed erratically, but there has been a clear medium-term tendency for production, and to a lesser extent apparent consumption, to stagnate or fall (figures 1 to 3).

From figures 1 to 3 the following general tendencies can be deduced for the period from 1991 to 1997:

– The trend in footwear production was erratic, with a tendency for output to stagnate (Argentina) or fall (Uruguay and Brazil).
– Apparent consumption was sluggish, even though gross output in the area increased substantially during the period.

In the three countries studied there was a large increase in imports which eventually reversed the positive trade balance that had traditionally been a feature of the sector in Uruguay and Argentina. Imports also rose substantially in the case of Brazil, but the trade balance remained in surplus thanks to large export volumes.

b) *Employment and productivity in the footwear industry*

According to the statistics available, the footwear industry of the three countries studied employed around 310,000 people in 1995. Of this total, 288,000 were accounted for by Brazil, 20,000 by Argentina and just over 2,000 by Uruguay.[4]

Between 1988 and 1998 the number of employees in the sector fell greatly in all the countries analysed (by over 50% in Uruguay and 20% in Argentina). This was the result of stagnant or falling output and rising productivity (figures 4 to 6).

These charts show that productivity improved considerably in the footwear industries of Brazil and Argentina and evinced great volatility in Uruguay.

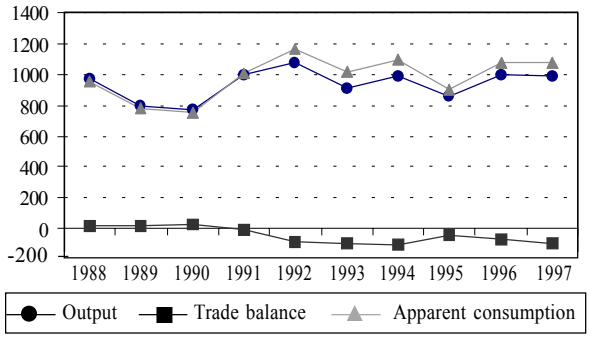
[3] Between 1970 and 1990 Brazil increased its share of world leather footwear exports from 0.5% to 12.3%.

[4] We believe that the employment figures for the sector may be distorted by the informal nature of some of its activities.

FIGURE 1

Argentina: Output and apparent consumption of footwear, 1988 to 1997

(Millions of 1993 Argentine pesos)

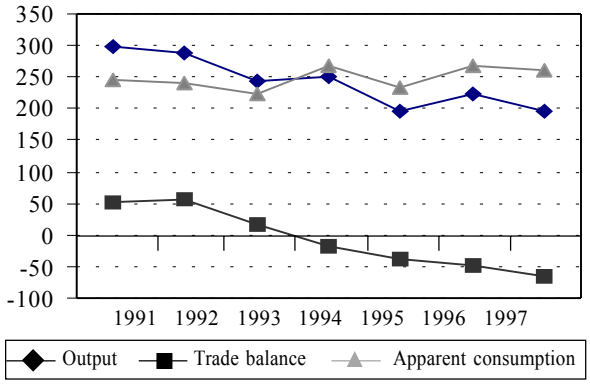


Source: Prepared by the authors using data from the National Institute of Statistics and Censuses (1997).

FIGURE 2

Uruguay: Output and apparent consumption of footwear, 1991 to 1997

(Millions of 1993 Uruguayan pesos)

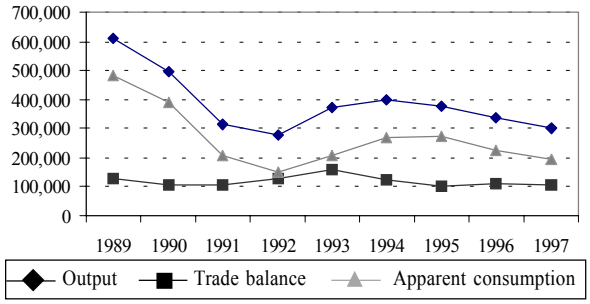


Source: Prepared by the authors using data from Laens, Osimani and Failde (1999).

FIGURE 3

Brazil: Output[a] and apparent consumption of footwear, 1989 to 1997

(Millions of 1993 Uruguayan pesos)



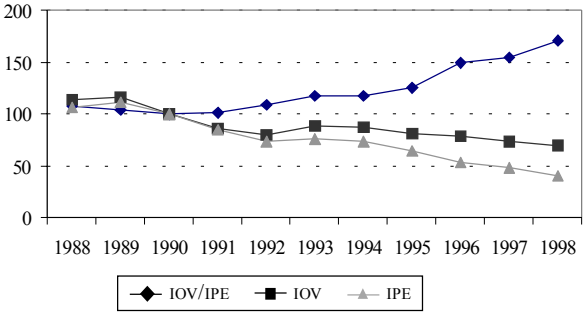
Source: Prepared by the authors using data from Correa (1999).

[a] The output series includes the clothing sector.

FIGURE 4

Brazil: Productivity, output volume and personnel employed in the footwear industry,[a] 1988 to 1998

(Index: 1990 = 100)



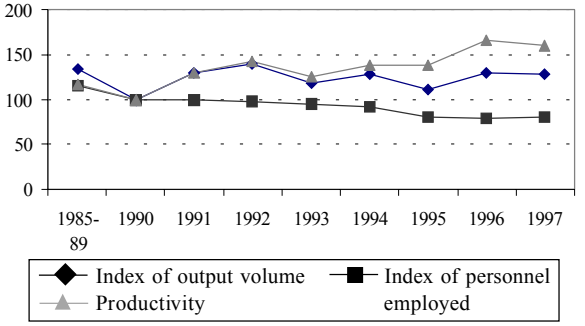
Source: Correa (1999).

[a] IOV: Index of output volume.
IPE: Index of personnel employed.

FIGURE 5

Argentina: Employment and productivity in the footwear industry, 1985-1989 to 1997

(Category 324 in the International Standard Industrial Classification, Rev. 2. Index: 1990 = 100)

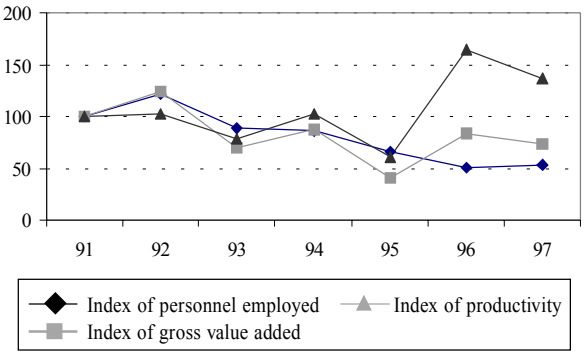


Source: Prepared by the authors using data from the National Institute of Statistics and Censuses (1997).

FIGURE 6

Uruguay: Employment and productivity in the footwear industry, 1991 to 1997

(Index: 1991 = 100)



Source: Laens, Osimani and Failde (1999).

TABLE 4

Mercosur: Factors of competitiveness in the footwear sector

Country	Argentina	Brazil	Paraguay	Uruguay
Availability of raw materials	Very good	Good	Reasonable	Very good
Availability of labour	Reasonable	Abundant	Poor	Reasonable
Cost of labour	High	Low	Low	Medium
Skill level of workforce	Reasonable	Good	Low	Reasonable
Installed capacity	Reasonable	High	Low	Low
Production technology	Reasonable	Very good	Poor	Poor
Company size	Medium	Large	Small	Small
Business maturity	Reasonable	High	Low	Low
Production scale	Medium	High	Low	Medium
Supplier network	Poor	Very good	Bad	Poor
Capital goods	Poor	Good	Nil	Nil
Technical infrastructure	Reasonable	Very good	Poor	Poor
Government support	Nil	High	Nil	Nil

Source: UNIDO (1993).

3. Competitiveness

The competitive situation of the footwear industry varies greatly between the different countries of Mercosur. A study by the United Nations Industrial Development Organization (UNIDO, 1993) provides a highly revealing account of the factors involved in competitiveness (table 4).

From the study referred to, it can be concluded that the Argentine footwear industry is facing a clear problem of competitiveness. The changes that have taken place in the country in recent years (which are not covered by that study) can be seen to involve considerable progress in production technology and somewhat lesser progress in business maturity. However, the high degree of import penetration seen in the country during the 1990s suggests that the overall picture remains negative. Most of the companies consulted said that lack of cost competitiveness was a major barrier to exporting.[5] The availability of an ample supply of good-quality leather does not translate into a competitive advantage for footwear companies, because the demand they generate is relatively small by comparison with export demand, so that the price and quality conditions they obtain locally are the same as or worse than those obtained by foreign buyers.

The Brazilian footwear industry, by contrast, has managed to consolidate its competitiveness in international markets. As the UNIDO study shows, Brazil has succeeded in coupling the advantages conferred by an abundant supply of cheap labour with different factors conducive to systemic competitiveness: a good supply of locally produced raw materials and capital goods, a substantial technical infrastructure and highly skilled labour. Some authors link the competitive success of certain Brazilian regions such as the Valle de Sinos with the existence of external economies of agglomeration and the collective endeavour of the companies themselves (Humphrey and Schmitz, 1996). The latter is based on cooperation by individual firms (lending of equipment and tools or new product development) or groups of firms joining forces to set up trade associations or production consortia. As a result of this collective action, six industrial associations have been formed in the Valle del Sinos, along with four centres providing technical services and training and a trade fair organization (FENAC) which has played an important role in forging relationships with foreign buyers, particularly in the United States (Schmitz, 1997).

In the face of increasing penetration of the United States market by low-priced Chinese leather footwear, Brazil has been obliged in recent years to raise the quality of its products and reduce delivery times. This has led to new forms of cooperation between Brazilian firms right along the production chain, which has gradually increased trust between them and helped them take the action necessary to consolidate their competitiveness (Schmitz and Knorringa, 1999).

Although on the whole the analysis of competitiveness shows Brazil in a better light, the competitive situation varies between the different segments of the sector. In sports footwear Argentina is relatively well placed, chiefly as regards products with more value

[5] Lack of competitiveness as regards quality, by contrast, is a fairly minor problem.

added and greater technological content. The lower wage costs of Brazil are offset in Argentina by high quality and productivity.

Where non-sports footwear is concerned, the competitive situation of Argentina is much more fragile than that of Brazil, owing both to macroeconomic variables (wage levels and a high real exchange rate, the latter following the recent devaluation of the real) and to microeconomic ones (technological capabilities, economies of scale, workforce skill levels) and the position as regards public-sector incentives. Problems of competitiveness are found right along the Argentine production chain whereas, for the reasons referred to, the conditions for the supply of raw materials and inputs (except for leather) are better in Brazil, i.e., the production chain is better structured.

4. Mercosur trade with the rest of the world

a) *Global exports and imports*

The external footwear trade of Mercosur underwent marked changes in the 1990s. Between 1990 and 1996 the area's exports grew by 42% (table 5) while imports increased by 1,108%, albeit from a very low base (table 6). The regional trade of the sector continued to show a substantial surplus (table 7).

The overall figures for the footwear sector in Mercosur, though, mask very different national situations. Brazil accounts for around 95% of footwear exports from the area and is the only country that still has a trade surplus in this sector.

In Argentina, substantial growth in footwear imports led to a large trade deficit from 1992 onwards. Trade restrictions and a significant increase in exports partially reversed the deficit in 1995 and 1996.

The footwear industries of Uruguay and Brazil export between 30% and 40% of their output by value. Argentina's, on the other hand, has a very low export coefficient, as its focus is almost exclusively on the domestic market.

b) *Origin and destination of Mercosur external trade in footwear*

The geographical origin and destination patterns of footwear exports from the different countries of Mercosur between 1988 and 1996 differed considerably (table 8). Over 90% of Brazil's exports went outside the area and only a marginal (although growing) share went to Mercosur countries. Argentina, on the other hand, sent more and more of its exports to these countries (almost 75% in 1996), while its exports to the rest of the world declined in absolute terms. Uruguayan exports followed a similar pattern, although to a lesser degree. From this it can be deduced that exports to Mercosur have ended up by replacing the exports that the two latter countries used to send to the rest of the world.

The imports of the Mercosur countries also displayed differing geographical patterns (table 9). In Brazil, the share of intrazonal imports increased greatly, but imports from outside the zone remained much higher. In Argentina, the proportion of imports originating in Mercosur, mainly Brazil, also grew rapidly (to reach 50% in 1998). In Uruguay, however, the share of intrazonal imports fell over the 1990s.

5. Trade within Mercosur

a) *Intrazonal exports and imports*

As a result of the regional integration process, trade within Mercosur has been more dynamic than extrazonal trade. In fact, exports (imports) within the zone rose by 570% between 1990 and 1996 (tables 10 and 11).

The structure of intrazonal trade in the footwear sector, however, is very different from that of the sector's overall trade. Up until 1996 the leading export position of Brazil, which accounted for 60% of intrazonal exports in that year, was appreciably less marked in intrazonal trade than in trade with the rest of the world. Argentina, by contrast, was far more dynamic as an exporter within the zone.

As regards intrazonal imports, the most salient fact is that Brazil remained virtually closed to exports from the other Mercosur countries until 1994. Its imports (from Argentina) grew strongly from that year onwards, however, with the result that the structure of intrazonal imports came to resemble that of imports from outside the zone more closely. As a consequence of these developments, intrazonal trade balances were very different from those with the rest of the world: Brazil had a fairly modest surplus, while Argentina alternated between deficits and surpluses in different years. From 1997 onwards, the position of Argentina deteriorated sharply, with a growing deficit emerging in sectoral trade with Brazil.

TABLE 5

Mercosur: Footwear exports, 1990 to 1996

	1990	1991	1992	1993	1994	1995	1996
				A. Thousands of dollars			
Argentina	33 084	35 807	24 472	30 605	33 655	75 227	50 566
Brazil	1 104 766	1 176 660	1 409 156	1 859 818	1 537 351	1 413 780	1 567 403
Uruguay	16 844	18 530	22 952	24 903	20 735	17 082	19 949
Paraguay	12	372	51	32	1 199	115	147
Mercosur	1 154 706	1 231 369	1 456 631	1 915 358	1 592 940	1 506 204	1 638 065
				B. Percentages			
Argentina	3	3	2	2	2	5	3
Brazil	96	96	97	97	97	94	96
Uruguay	1,5	2	2	1	1	1	1
Paraguay	–	–	–	–	–	–	–
Mercosur	100	100	100	100	100	100	100

Source: Prepared by the authors using data from INTAL (1997).

TABLE 6

Mercosur: Footwear imports, 1990 to 1996

	1990	1991	1992	1993	1994	1995	1996
				A. Thousands of dollars			
Argentina	3 515	44 416	110 868	128 373	141 463	114 232	116 587
Brazil	18 524	33 107	12 108	34 785	84 277	201 829	199 958
Uruguay	2 958	7 960	12 393	21 146	22 708	24 854	32 050
Paraguay	6 471	10 288	7 114	11 239	21 418	35 238	32 002
Mercosur	31 468	95 771	142 483	195 543	269 866	376 153	380 597
				B. Percentages			
Argentina	11	46	78	66	52	30	31
Brazil	59	35	8	18	31	54	53
Uruguay	9	8	9	11	8	7	8
Paraguay	21	11	5	6	8	9	8
Mercosur	100	100	100	100	100	100	100

Source: Prepared by the authors using data from INTAL (1997).

TABLE 7

Mercosur: Trade balance of the footwear sector, 1990 to 1996
(Thousands of dollars)

	1990	1991	1992	1993	1994	1995	1996
Argentina	29 569	-8 609	-86 396	-97 768	-107 808	-39 005	-66 021
Brazil	1 086 242	1 143 553	1 397 048	1 825 033	1 453 074	1 211 951	1 367 445
Uruguay	13 886	10 570	10 559	3 757	-1 973	-7 772	-12 101
Paraguay	-6 459	-9 916	-7 063	-11 207	-20 219	-35 123	-31 855
Mercosur	1 123 238	1 135 598	1 314 148	1 719 815	1 323 074	1 130 051	1 257 468

Source: Prepared by the authors using data from INTAL (1997).

TABLE 8

Mercosur: Intrazonal exports of member countries, 1988-1996
(Percentages)

Origin	1988	1989	1990	1991	1992	1993	1994	1995	1996
Brazil	1	1	1	1	2	2	3	4	4
Argentina	19	13	18	25	25	45	52	69	74
Uruguay	6	7	8	18	29	32	41	39	40

Source: Prepared by the authors using data from INTAL (1997).

TABLE 9

Mercosur: Intrazonal imports of member countries, 1988-1996
(Percentages)

Origin	1988	1989	1990	1991	1992	1993	1994	1995	1996
Brazil	...	14	9	6	6	2	4	22	25
Argentina	31	24	4	11	18	14	18	23	39
Uruguay	...	71	67	59	60	50	55	41	41
Total	...	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

Source: Prepared by the authors using data from INTAL (1997).

TABLE 10

Mercosur: Intrazonal footwear exports, 1990 to 1996

	1990	1991	1992	1993	1994	1995	1996
				A. Thousands of dollars			
Argentina	5 798	8 959	6 003	13 620	17 484	51 566	37 458
Brazil	9 400	15 816	27 194	44 856	45 665	51 782	66 014
Uruguay	1 357	3 261	6 580	7 869	8 506	6 670	7 985
Paraguay	5	372	39	32	81	12	133
Mercosur	16 560	28 408	39 816	66 377	71 736	110 030	111 590
				B. Percentages			
Argentina	35	32	15	21	24	47	34
Brazil	57	56	68	68	64	47	59
Uruguay	8	11	17	12	12	6	7
Paraguay	0	1	0	0	0	0	0
Mercosur	100	100	100	100	100	100	100

Source: Prepared by the authors using data from INTAL (1997).

TABLE 11

Mercosur: Intrazonal footwear imports, 1990 to 1996

	1990	1991	1992	1993	1994	1995	1996
				A. Thousands of dollars			
Argentina	134	4 857	19 678	18 113	25 570	25 954	45 702
Brazil	1 620	2 019	687	600	3 507	43 689	50 527
Uruguay	1 975	4 732	7 473	10 540	12 495	10 096	13 141
Paraguay	436	373	790	3 530	4 777	9 665	7 806
Mercosur	4 165	11 981	28 628	32 783	46 349	89 404	117 176
				B. Percentages			
Argentina	3	41	69	55	55	29	39
Brazil	39	17	2	2	8	49	43
Uruguay	47	39	26	32	27	11	11
Paraguay	10	3	3	11	10	11	7
Mercosur	100	100	100	100	100	100	100

Source: Prepared by the authors using data from INTAL (1997).

TABLE 12

Mercosur: Intrazonal trade balance of the footwear sector, 1990 to 1996
(Thousands of dollars)

	1990	1991	1992	1993	1994	1995	1996
Argentina	5 664	4 102	-13 675	-4 493	-8 086	25 612	-8 244
Brazil	7 780	13 797	26 507	44 256	42 158	8 093	15 487
Uruguay	-618	-1 471	-893	-2 671	-3 989	-3 426	-5 156
Paraguay	-431	-1	-751	-3 498	-4 696	-9 653	-7 673

Source: Prepared by the authors using data from INTAL (1997).

IV

Static and dynamic effects attributable to the zonal integration process

1. Analysis of economic effects of a static nature

Static-type analyses of integration and trade liberalization processes generally seek to ascertain the extent to which these processes reduce the static distortions created by trade protection. From this point of view, trade liberalization and zonal integration are undoubtedly bringing static benefits to the three countries studied. Imports have grown considerably, displacing national production and increasing the variety of products (in terms of both design and quality) available to consumers. Furthermore, in the case of Argentina average import prices have always been lower than the estimated average prices of domestic products, so it might be said that competition from imported products has disciplined domestic prices.

At the same time, the zonal integration and trade liberalization processes would also appear to have generated static benefits on the export side, with the countries of Mercosur increasing their exports of both footwear and leather (an area where Argentina and Uruguay have comparative advantages in static terms).

Hitherto we have dealt with the static effects of the general trade liberalization process at the extrazonal level (unilateral liberalization) and at the intrazonal level (integration). We should now consider whether or not the zonal integration process in itself has generated benefits of a static nature.

Assuming that the productive resources released by protected activities are spontaneously redeployed in sectors with genuine comparative advantages (generating greater profitability than in the past), Vinerian analyses tend to centre on the behaviour of imports and on the way these displace imports from other origins (trade diversion) or inefficient national production (trade creation). It needs to be asked, then, whether Mercosur has generated trade creation or diversion.[6] Using extrazonal and intrazonal imports as the basis for analysis, the answers vary depending on the period of analysis chosen.

One option is to compare the situation as it was in any year of the 1990s with what it was before the regional integration process began in January 1991. Since the Mercosur countries imported virtually no footwear in the late 1980s, the answer will obviously be that there has been no trade diversion (imports that never existed cannot have been displaced).

A second option is to follow the sequence of zonal trade liberalization and integration more closely. When this is done the results are very different. The integration process in the footwear sector has had a dynamic that in some respects differs from that of the unilateral trade liberalization process undertaken by the countries of Mercosur. Two major stages can be identified:

i) Between 1991 and 1994 unilateral trade liberalization advanced in the sector while the zonal integration process had serious shortcomings (see section II).

ii) From 1995 onwards zonal integration (tariff preferences) went forward while the unilateral trade liberalization process was partially reversed.

When the situation in 1996-1997 is compared with that in 1992-1994, the Argentine case shows some signs of trade diversion from the rest of the world to Brazil (table 13).

It is found, then, that with a production level that is almost constant between the two averages, Argentine footwear imports from the rest of the world fell by an average of US$ 24 million, while imports from Brazil increased by US$ 33 million.[7] The presumption that trade diversion took place is given credence by the fieldwork done in Brazil, which points to the conclusion that neither the type of footwear exported to Argentina nor the identity of the companies exporting it are the same as are involved in Brazil's exports to the rest of the world.

TABLE 13

Argentina: Imports from Brazil and from the rest of the world

(Millions of dollars)

	Annual average for the period 1992-1994	Annual average for the period 1996-1997	Difference
Imports from Brazil	13.0	46.0	+33.0
Imports from the rest of the world	114.1	90.0	-24.1
Local production	993.3	994.5	+1.2

Source: Prepared by the authors using data from the National Institute of Statistics and Censuses (1997).

Something similar may have occurred in Brazil, although to a lesser degree. The change in trade policy that took place in 1995 may have contributed to the transformation in the structure of import origin seen between 1995 and 1997: whereas imports from within Mercosur grew by US$ 18 million, imports from outside the zone fell by US$ 22.5 million.

In many cases, trade diversion (which always entails a loss of static efficiency) is the result of trading behaviour that reflects the dynamic gains (exploitation of economies of scale, product specialization, dissemination of technological know-how, learning effects, etc.) resulting from the integration process. Unfortunately, as we shall see in the following subsection, these dynamic gains have been relatively modest, so that the trade diversion detected here needs to be evaluated essentially on the basis of its static effects.

Considering the production complex as a whole, the orientation of trade growth in the context of Mercosur seems to have been towards greater product specialization and consolidation of static comparative advantages. In this process, Brazil came to specialize in the more labour-intensive segment (with greater value added) of the production chain (footwear) while

[6] Although discussions couched in terms of trade creation and diversion are encountered throughout the specialist literature on the subject, there are very difficult methodological problems involved in arriving at empirical estimates.

[7] Preliminary figures for 1998 show Brazil's share of total Argentine footwear imports continuing to grow (to stand at 45%).

Argentina and Uruguay consolidated their position as exporters in the leather segment, where they have natural comparative advantages.[8]

2. Dynamic effects of the Mercosur integration process

As was seen in section III, the footwear sector in Mercosur is undergoing a marked transformation. Numerous footwear producers have shut down in Argentina and Uruguay, and to a lesser extent in Brazil, and the surviving firms have adopted a great variety of strategies.

To what extent has zonal integration influenced this transformation process? Fieldwork carried out in Argentina, Brazil and Uruguay shows that, at least in the view of those actually involved, it has had less influence than other factors:

In the case of Argentina, less importance is attributed to zonal integration as a trigger for the changes that have occurred than to the trade liberalization and macroeconomic stabilization processes.

In the case of Brazil, more than a third of the companies interviewed admitted that they had not changed the way they conducted their businesses as a result of Mercosur. The main factors behind the recent performance of the sector, according to them, were the exchange-rate effect and monetary tightening resulting from the Plan Real and the devaluation of the South-East Asian currencies, developments that led to a deterioration in the competitive situation both in the local market and in export ones (notably the United States, where there has been a sharp rise in imports of Chinese footwear), and, more recently, the devaluation of the real.

In the case of Uruguay, the general feeling among the employers interviewed was that the current situation in the sector was not the direct result of the integration process, but was rather due to other factors such as the exchange-rate situation (in conjunction with a reduction in export reimbursements), a lack of public-sector incentives and the competition being generated both by imports from South-East Asia and by informal and smuggling activity.

Again, in Uruguay and Argentina zonal integration is seen as an asymmetrical and essentially negative process for the sector, with the main gainer being Brazil. Some of the areas where the integration process might have been expected to produce positive dynamic effects are described below.

a) *Competitive pressure and industrial conversion in the sector*

The main effect of Mercosur on Argentine and Uruguayan footwear firms has been to increase markedly the competitive pressure exerted by imports from member countries (from Brazil in the case of Argentina, and from Argentina and Brazil in the case of Uruguay).

Of the fifteen firms canvassed in Argentina about the effects of zonal integration, seven spoke of losing local market share to Brazilian producers. In these cases competition had come about both directly and through the displacement of demand towards lower-priced footwear in which Brazil is more competitive. In the Argentine case it might be pointed out that the increased competitive pressure generated by integration has helped stimulate the technological modernization and productivity improvements that have been a feature of the sector there.[9]

However, the response of Argentine companies to the competitive challenge created by imports (from Mercosur and from the rest of the world) was very varied.

In the sports footwear segment, the leading companies sought to maintain their position by obtaining or renewing licences for international brands, introducing state-of-the-art technology and substantial organizational changes and increasing product specialization. Meanwhile, although they continued to be essentially manufacturers, they also adopted the strategy of supplementing their local output with imported products and, to a lesser extent, of disintegrating the production chain by importing shoe parts.[10] Only in the case of Alpargatas Calzados S.A. was an aggressive export strategy seen. This was pursued largely by obtaining the

[8] Brazil moved up from third place among countries of origin for Argentine imports to first place. At the same time, exports of Argentine leather to Brazil increased ninefold between 1988-1989 and 1995-1996.

[9] The effects of the competitive pressure generated by the countries of Mercosur themselves should not be overstated. In the case of Argentina, the high level of penetration by Brazilian products is a relatively recent phenomenon owing to the fact that tariff preferences only began to become significant in 1995-1996 (as extrazonal barriers were raised and intrazonal tariffs came down), so it cannot be considered responsible for sectoral transformations that largely took place before 1995.

[10] All the business groupings involved with sports footwear production had a negative trade balance.

Nike licence to sell in Brazil and by exploiting the company's own Topper brand in South American markets.

Smaller companies in this segment behaved differently: some of them shut down, others scraped by in limited local markets and the rest were obliged to change their line of business.

Now that prices have stabilized, however, and brands have been strengthened by the use of licensees, the big transnational footwear companies have sought to take back control of their brands in order to supply the market with products imported from their factories in South-East Asia. Thus, the main domestic sports footwear producers have found it increasingly difficult to renew licences, and this is the biggest medium-term threat to domestic production.

In the non-sports footwear segment, the situation of Argentine producers is different. The companies involved are smaller and have found it more difficult to come up with a coherent approach to restructuring. They have tended to concentrate on the domestic market and increase product variety (despite the diseconomies of scale) to capture different market niches. Again, smaller companies have not had the capacity to apply more defensive restructuring strategies, such as using their marketing network to distribute imported footwear or import shoe parts. Medium-sized and larger companies in this segment have made more use of such defensive strategies, and in some cases the importing business has been gaining more and more ground over local manufacturing. By contrast with what has happened in Brazil, Argentine firms have made very little effort to cooperate among themselves, and the agreements that have been arrived at have been short-lived.

A similar situation seems to have arisen in Uruguay, as the strategies the companies interviewed set store by were specialization in producing for niches less exposed to international competition (smart men's shoes or country footwear) and use of their marketing networks to distribute imported products.[11]

In Brazil, on the other hand, zonal integration has not greatly added to the competitive pressure felt by local industry. For a large majority of the companies interviewed, imports from Mercosur that competed with their products accounted for less than 10% of the local market, and furthermore were stable or declining. None of the firms consulted said they had reduced production because of intrazonal imports.

In conclusion, Mercosur has meant greater competitive pressure for companies in the footwear sector in Argentina (which is increasing as intrazonal tariff barriers come down) and in Uruguay, but the same is not true for companies in Brazil. The effects of this increased competitive pressure on the strategic decision-making of Argentine and Uruguayan firms should not be underestimated just because the tendency is a recent one in Argentina and not so marked (as regards extrazonal imports) in Uruguay. In any event, the intrinsic weaknesses of the sector and the absence of a favourable environment have meant that this increased competitive pressure has in the main been responded to defensively, for example by producers gradually turning themselves into importers. In the few cases where a more aggressive restructuring strategy has been seen (for example in the case of Alpargatas Calzados S.A. in Argentina), the outcome of this strategy will be greatly affected by the tendency of big international brands to restrict the licences they grant to local firms as time goes on.

b) *Dealing with an expanded zonal market, capitalizing on economies of scale and coverage and learning about exporting*

The effects that the expansion of the subregional market is having on Mercosur companies do not seem to be critical. They are most in evidence in Brazil and in a few isolated instances in Argentina and Uruguay.

Clearly, it is Brazilian firms that have taken the greatest advantage of Mercosur to expand their intrazonal exports: 40% of the firms approached said they had increased output thanks to Mercosur, while a third claimed that they had developed new products tailored to the preferences of consumers in other member countries. Looking to the future, a third of the companies said that in future they would concentrate their greatest selling efforts on the Mercosur countries.

Although intrazonal footwear exports increased substantially in the late 1980s as a share of the total, the proportion of Brazil's sectoral exports and total footwear output that they account for is still very low, at 8% and 4% respectively in 1998. Consequently, the possible impact of these trade flows on production costs in the form of economies of scale should not be overestimated. Nor have substantial changes been seen in business behaviour (such as product specialization with companies in the zone, or mergers and acquisitions).

[11] In this case, too, the impact that the increased competitive pressure generated by Mercosur may have had should be put in perspective, as imports from the rest of the world are more significant both absolutely and in terms of growth rates.

It should be emphasized, though, that the export opportunities opened up by Mercosur have enabled Brazilian firms that have traditionally focused on the domestic market (including sports shoe manufacturers) to commence export operations, with the consequent learning effects that may help them to expand their operations outside the zone in future. Again, some companies that have traditionally exported women's footwear have used the Argentine market to break into own-brand exporting.

Argentine footwear firms have not yet succeeded in exploring the large Brazilian market adequately. Only three of the fifteen Argentine firms surveyed said they had penetrated it. One of them (Alpargatas Calzados S.A.) has achieved this essentially because of a temporary licence issued by Nike International to market its brand in Brazil, which casts doubt over the sustainability of the company's activities in the coming years.[12] The other two firms, which have been exporting mid- and high-range non-sports footwear, have been relatively unsuccessful, either because of poor profitability or because of non-payment problems partly brought about by the import financing restrictions imposed by the Brazilian Government.

Argentine firms have had greater success in the Uruguayan market and, to a lesser extent, the Paraguayan one. However, it is difficult to specify how much influence zonal integration has had on this process, since the same firms that say they export to Uruguay and Paraguay also export to other Latin American countries where they do not enjoy any trade preference. Besides, the Uruguayan and Paraguayan markets are smaller. Thus, for the companies consulted (except for Alpargatas Calzados S.A.), the prospects of achieving greater economies of scale because of zonal integration have been virtually nil. Sluggish exports, combined with loss of local market share and stagnant consumption, have also limited the prospects for profiting from greater product specialization.[13]

Meanwhile, most of the Mercosur companies that have succeeded in exporting footwear within the zone already had substantial exporting experience, so it can be said that the impact of subregional integration on learning has not been very significant.

In Uruguay, the subregional integration process has given rise to an increase in the sector's exports to Argentina but not to Brazil. Even so, the bulk of Uruguayan footwear exports still go to markets outside the zone.

The fact that the extrazonal exports of Argentina and Uruguay dropped in absolute terms over the course of the 1990s shows that subregional integration has not served as a launch pad into new markets either.

In conclusion, it can be deduced that Mercosur has generated some dynamic benefits in terms of production scale, economies of coverage and export learning effects, mainly in Brazil. The inability of the Uruguayan footwear industry and the Argentine non-sports footwear segment to penetrate the Brazilian market has limited these benefits for those two countries.

c) *New technology, the dissemination of know-how and improved access to raw materials and inputs*

One area in which there do seem to have been some positive dynamic effects is the dissemination of technology and know-how. Five of the fifteen firms interviewed in Argentina had purchased capital goods produced in Brazil. Another three said they had introduced organizational techniques used in Brazilian firms and, more significantly still, two firms declared they had hired Brazilian engineers or overseers to work on their industrial restructuring programmes. Another eight, furthermore, said that zonal integration had improved access to raw materials and inputs.

None of the field studies, however, detected any "deep integration" initiatives, such as cooperation agreements going beyond mere distribution of imported products, complementary production systems or the establishment of factories in other Mercosur countries (although distribution companies have been set up).

[12] The operations of this firm alone would account for almost the entire increase in Argentine footwear exports to the Brazilian market since 1995.

[13] In early 1993, UNIDO (1993) predicted that the Brazilian footwear industry would dominate domestic markets for low-priced footwear while Argentine and Uruguayan producers would do the same in the higher segments. Six years on it could be seen that only the first part of the UNIDO forecast had become reality.

V

By way of conclusion: inherited advantages and acquired advantages

The footwear industries of the different Mercosur countries entered the 1990s in very different positions. The Brazilian industry had created and consolidated competitive advantages: its production chain was well structured (there were good suppliers of inputs and parts, companies producing capital goods for the sector and specialist occupational training institutions) and its exports had penetrated the main international markets. This progress was facilitated by a high geographical concentration of production, which made it possible to capture externalities, and by the collective efforts of companies themselves to resolve their competitive problems by setting up industrial associations, training centres and trade organizations. Compared with countries like Italy, however, Brazil does not appear to have made much progress in developing its own designs, a situation that may limit its role in the sector in future; interaction with Argentine companies in this area may help increase Brazilian potential.

The footwear industries of Argentina and Uruguay, on the other hand, entered the 1990s in a totally different position. Firstly, macroeconomic instability and the fitfulness of public- and private-sector export promotion efforts (which peaked in both countries in the mid-1970s) prevented them from consolidating their export position and thus restricted their development to a relatively small and sluggish domestic market. Secondly, the ingredients for systemic competitiveness were not in place as, by contrast with the situation in Brazil, the industries supplying inputs and machinery could not develop properly owing to a lack of joint initiatives by companies. Lastly, institutional mechanisms for supporting technological innovation and occupational training were not strong enough.

In the case of Argentina, this situation in the footwear sector contrasted greatly with that of the leather industry which, after a period of high investment and modernization (in some cases sustained by large public-sector incentives), appeared to be competitive and well equipped for exporting.

The great challenge for the Argentine and Uruguayan footwear industries was to modernize and capitalize on the natural comparative advantages provided by their leather industries to create dynamic advantages in the next links of the production chain (footwear and leather goods). However, unilateral trade liberalization tended to reinforce a form of trading based on natural advantages, which translated into strong growth in leather exports and a marked deterioration in the trade balance of the footwear sector.

The zonal integration process seems in many respects to have worked in the same direction as unilateral trade liberalization. None of the static or dynamic benefits that could be generated by this process –and not by one of unilateral trade liberalization– seem to have had a decisive influence in Argentina or Uruguay (except, so far, growth in Argentine exports of sports footwear to Brazil). Nonetheless, from the way Argentine and Uruguayan exports have behaved it can be seen that Mercosur has ended up becoming the destination for exports which previously went to the rest of the world and which, for a variety of reasons, became less competitive with the products of other supplier nations.

Meanwhile, the large initial differences in maturity and competitiveness that separated the region's industries, combined with major regulatory asymmetries that have not yet been subjected to community discipline, have prevented zonal integration giving rise to a form of industrial specialization that can provide a platform for capturing new markets outside the zone. Thus, there is a tendency towards entrenchment of a kind of sectoral specialization in which Argentina and Uruguay reinforce their role as providers of leather while the market share of Brazilian footwear in the region grows.

In Mercosur, macroeconomic developments, unilateral trade liberalization vis-à-vis the rest of the world and the tendency for apparent consumption levels to stagnate (Argentina) or fall sharply (Brazil) have led to production and employment levels declining and to a relative deterioration in the trade balance of the sector (which is still positive, however, thanks to the solid exporting position that has been maintained by Brazil).

In future, if the aim is for the subregional integration process to be justified by dynamic development of the footwear industry in all member countries, both

national governments and Mercosur as a whole will have to consider:

i) putting in place the conditions for fair competition within the subregion by harmonizing investment and export incentive policies and phasing out explicit and implicit trade barriers;

ii) developing national policies of a horizontal nature that facilitate the productive and technological restructuring of companies in the sector, ensuring they have access to credit on competitive terms and can introduce new technologies, improving management capabilities and decision-making and promoting the internationalization of business strategies, and

iii) taking action in Mercosur to develop community policies that encourage intra-industry specialization and complementary production systems, and to establish coordinated strategies between companies so that these can compete with extrazonal suppliers both in local markets and in those of the rest of the world.

Bibliography

CLAVES (1997): Calzado e indumentaria deportiva. Informe sectorial, Buenos Aires, *mimeo*.

Correa, P. (1999): Impacto setorial dos processos de integração subregional. O caso de calçados, Rio de Janeiro, Centre for Foreign Trade Studies Foundation, *mimeo*.

Da Costa, A.B. (1993): *Competitividade da indústria de calçados. Estudo da competitividade da indústria brasileira*, Campinas, Brazil, State University at Campinas/Centre for Foreign Trade Studies Foundation.

Humphrey J. and Schmitz H. (1996): The triple C approach to local industrial policy, *World Development*, vol. 24, No. 12, Oxford, U.K., Pergamon Press.

INTAL (Institute for the Integration of Latin America and the Caribbean) (1997): *Sistema de estadísticas de comercio de América*, Buenos Aires.

Laens, S., R. Osimani and A. Failde (1999): Sector calzado. El caso de Uruguay, Montevideo, Economic Research Centre (CINVE), *mimeo*.

Ministry of Industry and Foreign Trade (1997): Sector calzados. Comercio exterior y medidas arancelarias, Buenos Aires, *mimeo*.

National Institute of Statistics and Censuses (1994): *Censo nacional económico*, Buenos Aires.

_____ (1997): *Anuario estadístico*, Buenos Aires.

Schmitz, H. (1997): *Collective Efficiency and Increasing Returns*, IDS Working Paper, No. 50, Brighton, U.K., University of Sussex, Institute of Development Studies (IDS).

Schmitz, H., and P. Knorringa (1999): *Learning from Global Buyers*, IDS working paper, No. 100, Brighton, U.K., University of Sussex, IDS.

UNIDO (United Nations Industrial Development Organization) (1993): Medium-term scenarios for industrial restructuring: the leather and footwear subsector, Vienna, *mimeo*.

_____ (1995): *International Yearbook of Industrial Statistics 1995*, Vienna.

_____ (1996): *International Yearbook of Industrial Statistics 1996*, Vienna.

Recent ECLAC publications

Periodicals

Social Panorama of Latin America 1999-2000, LC/G.2068-P, United Nations Publication, Sales number: E.00.II.G.18, ECLAC, Santiago, Chile, November 2000, 312 pages.

The 1999-2000 edition of the Social Panorama of Latin America examines the growing social vulnerability of the population, the main features of the pattern of occupational stratification associated with newly emerging modes of development, the living conditions of two particularly vulnerable groups, namely, children and adolescents, and older adults, and the institutional and social implications of drug production, trafficking and consumption in the region.

Social vulnerability is manifested in feelings of economic precariousness, and of insecurity and defencelessness, which seem to overwhelm the majority of the population in many countries. This edition of the Social Panorama explores the objective reasons underlying this phenomenon, including the increasing instability of household income, which causes households to emerge from and fall back into poverty, and the increasing precariousness of a labour market where fewer and fewer workers have permanent jobs, proper contracts or social security.

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The chapter on older adults examines issues relating to the well-being of this group, the living arrangements developing in response to the ageing of the population, the coverage provided by social security systems, which are the main source of income for older adults, the extent to which the latter participate in the labour force and the impact of these factors on income distribution and the poverty level of the households of which these adults are part.

The chapter on living conditions for children and adolescents looks at the impact of economic growth in the 1990s on poverty levels affecting this segment of the population, the main risk factors during early childhood and lags in terms of education.

The chapter dealing with the social agenda explores the problems associated with drug production, trafficking and consumption in Latin America and discusses how this affects the quality of people's lives, how it exacerbates the problem of social exclusion and how drugs undermine the stability of the region's institutions and instil a sense of insecurity in the population.

Other publications

Financial globalization and the emerging economies, LC/G.2097-P, United Nations Publication, Sales number E.00.II.G.39, ECLAC, Santiago, Chile, May 2000, 328 pages.

One of the most dynamic features of globalization in recent years has been the increasing integration of financial markets. Capital flows to emerging economies expanded rapidly, often leaving in their wake financial crises that affected much of Asia and Latin America.

There is broad recognition that financial instability is deeply rooted in the way markets now operate and that in-depth analysis is urgently needed in order to come up with better solutions for crisis prevention and management. Recent meetings of international financial institutions, of the G-7 and of a number of developing economy groupings have been devoted to this issue.

This collection of essays is the outcome of an international conference convened jointly by ECLAC and the International Jacques Maritain Institute of Rome, and held in Santiago, Chile, in 1999. The conference brought together policy makers, academics, members of international institutions and a variety of social actors.

The book is divided into four sections. The introduction contains the opening statements delivered at the conference. Part I presents a broad discussion of the issues and proposals on how to reform the international financial structure. Part II examines national policies for addressing financial instability and the role they play in stabilizing capital flows. Part III sets forth the viewpoints of different social actors on financial globalization, together with their message to policy makers.