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Economic growth, employment and poverty reduction: A comparative analysis of Chile and Mexico

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Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration 2008 on *Social Justice for a Fair Globalization, and[1]* which has now been widely adopted by the international community.

In order to support member States and the social partners to reach the goal, the ILO pursues a Decent Work Agenda which comprises four interrelated areas: Respect for fundamental worker's rights and international labour standards, employment promotion, social protection and social dialogue. Explanations of this integrated approach and related challenges are contained in a number of key documents: in those explaining and elaborating the concept of decent work[2], in the Employment Policy Convention, 1964 (No. 122), and in the Global Employment Agenda.

The Global Employment Agenda was developed by the ILO through tripartite consensus of its Governing Body's Employment and Social Policy Committee. Since its adoption in 2003 it has been further articulated and made more operational and today it constitutes the basic framework through which the ILO pursues the objective of placing employment at the centre of economic and social policies.[3]

The Employment Sector is fully engaged in the implementation of the Global Employment Agenda, and is doing so through a large range of technical support and capacity building activities, advisory services and policy research. As part of its research and publications programme, the Employment Sector promotes knowledge-generation around key policy issues and topics conforming to the core elements of the Global Employment Agenda and the Decent Work Agenda. The Sector's publications consist of books, monographs, working papers, employment reports and policy briefs.[4]

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[1] See http://www.ilo.org/public/english/bureau/dgo/download/dg_announce_en.pdf.

[2] See the successive Reports of the Director-General to the International Labour Conference: *Decent work* (1999); *Reducing the decent work deficit: A global challenge* (2001); *Working out of poverty* (2003).

[3] See http://www.ilo.org/gea. And in particular: *Implementing the Global Employment Agenda: Employment strategies in support of decent work, "Vision" document*, ILO, 2006.

[4] See http://www.ilo.org/employment.

Abstract

This study attempts to explain the evolution of poverty and income concentration in Chile and Mexico. It focuses on the impact that changes in the rates and pattern of economic growth have had on poverty. These changes have brought about the following: i) a reduction in the GDP elasticity of demand for labour; ii) the decline of the labour intensity of GDP and an increase in its capital intensity; iii) the decline or stagnation of tradable sectors as a source of total GDP and total employment; iv) the contraction of total demand for labour. Since the rise in labour productivity was not accompanied by an increase in total production, there was a sustained reduction of the GDP elasticity of employment, which resulted in poverty. The growth path of the economy does not, therefore, seem to have been the main factor that contributed to the reduction in poverty observed in the years leading up to the financial crisis of 2008-09. In the final sections, we explore the relation between social policies and poverty alleviation.

The economic crisis severely affected Chile and Mexico in 2008 and 2009. It brought increased unemployment and inflation in its wake, reducing incomes and partially wiping out the feeble gains in poverty alleviation and income distribution obtained during the 2002-07 period. We have updated, to the best extent possible, the statistical content of the study to capture the impact of the crisis on job creation and poverty.

Acknowledgements

Contents

1. Introduction

In Latin America, poverty has become a highly sensitive political issue. After twenty years of structural reforms, economic stabilization and trade liberalization, growth has not been as dynamic as expected; poverty and inequality prevail and conditions of employment do not seem to be improving. Even during the periods of accelerated growth, there were no significant reductions in poverty, and neither were there any major changes in the concentration of income. Poor economic results and labour insecurity have resulted in a "disenchantment with democracy". The concern about job insecurity is universal and perfectly understandable: work is the principal if not the only source of income of the poor - and because of their meagre income, they are always obliged to work. Many initiatives are therefore in place to lessen poverty, ranging from the Millennium Development Goals (MDGs) to various programmes throughout the world. The International Labour Organization (ILO) and the United Nations Development Programme (UNDP) have carried out studies analysing the linkages between employment, economic growth and poverty.

This study forms part of the ILO's research programme, conducted by the Recovery and Reconstruction Department (EMP/RECON), and follows the analysis established in the studies examining these linkages[5]. It provides further evidence of the heterogeneity of the group of countries studied and reinforces the scope and significance of the conclusions obtained from the programme. Chile and Mexico are middle-income developing countries, with nearly 80 per cent of the population living in urban areas. The two countries embarked upon the process of industrialization at the beginning of the twentieth century and adopted the import substitution model in the early 1950s. Chile and Mexico differ in both the size of their economies and in their paths of development and institution building.

To reduce poverty, growth is a necessary but insufficient condition. However, "…a rigorous analysis of the role of employment in the linkage between economic growth and poverty reduction appears to be missing" (Islam, 2004). Poverty alleviation depends on the characteristics of the growth model and its capacity to integrate into the productive system the labour reserves that, over the centuries, have accumulated in the majority of developing countries. For growth to benefit the underprivileged population groups, it is necessary to generate enough employment to simultaneously absorb the increases in the labour force and to raise total labour productivity. This requires an increase in physical and human capital endowment per worker, and the transference of labour from low productive to more productive activities. If these conditions were met, the virtuous circle outlined by Islam (2004) would emerge: growth would raise the productive capacity, which generates new jobs and creates the possibility of further increases in productivity and wages.

To reduce poverty and income concentration, GDP growth should create job opportunities for the poor and fairly distribute the effects of increases in productivity. According to Hoff et al. (1993), the efficiency of allocation depends on the distribution of wealth, because the concentration of income and wealth go hand in hand with the concentration of political power and the capacity to influence the design of policies that discriminate against labour (López et al; 2008). Consequently, the high concentration of income in Latin America may have negative effects on growth and distribution.

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[5] The countries studied in the ILO programme are Bangladesh, Bolivia, China, India, Viet Nam, Uganda, Indonesia and Ethiopia.

It is now 35 years since Chile launched its structural reforms, and 20 years since Mexico did the same. Mexico has been part of the North American Free Trade Agreement (NAFTA) since 1994, and Chile joined in 2002. The economic path followed by both these countries since their adhesion to NAFTA has not delivered the expected results in terms of poverty reduction and improvements in general well-being.

In 1970 Chile was one the most egalitarian societies in Latin America, with only 17 per cent of population living in poverty and 6 per cent in extreme poverty. After 1973, income concentration and poverty levels increased so much that in 1990 almost 39 per cent of population lived in poverty and 39 per cent in extreme poverty. After 1990 poverty levels started to decline systematically, thanks to sustained economic growth - and once the social policies implemented by the democratic regime started to bear fruit. In 2006, poverty affected 13.7 per cent of the population and extreme poverty 3.2 per cent. It took Chile 30 years to reach again the low levels of poverty registered in 1970. Despite the reduction in poverty, income concentration remains well above the levels of 1970. In 1970, the Gini coefficient was 50.1 per cent; it escalated to 58.5 per cent in 2005.

In 1970, the Mexican population had a higher incidence of poverty than Chile, with nearly 34 per cent living in poverty and 18 per cent in extreme poverty. These levels increased up to 1996, when almost 53 per cent of the population were living in poverty and 22 per cent in extreme poverty. After 1998, both poverty and extreme poverty declined, and by 2008 the levels were 34.8 per cent and 11.2 per cent, respectively. In 1970, the Gini coefficient was 49 per cent, reaching 52 per cent in 2008. It took Mexico almost 35 years to undue the social effects of the debt crisis and the lost decade.

This study comprises seven chapters. Chapter 2 describes the trajectory of poverty and employment during the 1970-2009 period and illustrates the effects of the crisis upon these variables. Chapter 3 describes the basic objectives of the reforms and compares the principal elements of the economic evolution of Chile and Mexico from a long-term perspective. Chapter 4 presents the results of a econometric analysis exploring the dynamics of employment and the sources of economic growth. Chapter 5 analyses the impact of the pattern of economic growth on the labour market, while Chapter 6 relates the evolution of the economy and the labour market to the trajectory of poverty and income concentration; and Chapter 7 presents conclusions.

1.1   The impact of the economic crisis

The global financial crisis affected Chile and México during the third quarter of 2008. As elsewhere in Latin America, the crisis primarily hit the real sector of the economy in both countries. Mexican GDP contracted at a higher rate than that of Chile, so that the impact on employment and wages was more severe in Mexico than in Chile. In 2009, Mexican GDP contracted by 7 per cent, while the corresponding rate for Chile was 1.7 per cent (see Table 1.1). That same year, Mexican unemployment reached 6.8 per cent - the same rate registered in 1982 when the debt crisis had a greater effect on GDP. In Chile, the unemployment rate in 2009 was 9.8 per cent, higher than in Mexico but lower than the record levels it suffered during the 1981-82 crises. The impact on minimum wages has been dramatic in both countries. It seems that neither Mexico nor Chile have been able to prevent the repetition of the severe economic downfall of the debt crisis and its repercussions on employment and salaries. Table 1.1 attempts to explore the channels of transmission of the crisis to the economies of Chile and Mexico and to explain why the effects vary so much from one country to another.

The severity of the crisis is related to the character of the external shocks that affected each country and the particular characteristics of each economy. As the International Monetary

Fund (2009) indicates, Mexico was the hardest-hit economy in the Western Hemisphere, because its economy suffered a sharper drop in trade flows – and on account of its high trade integration and its dependence on the United States. It was further affected by the contraction of manufacturing exports, of which 90 per cent are directed to the United States. In addition it suffered from the fall in external prices and in the volume of oil exported, as well as from the contraction of the remittances from Mexicans in the United States. Indeed, the contraction of the United States economy is the main factor behind the fall in Mexican GDP, as this has impacted on its exports and remittances economy. Mexico has also failed to benefit from the expansion of the Chinese demand for raw materials, as have Chile, Brazil and other Latin American countries. While tourism has declined by 16.8 per cent, the corresponding figure for Chile is 8 per cent. What is more, Chile created the stability fund from the boom in copper prices, which Mexico failed to do when oil prices were particularly high – and the former country implemented a countercyclical fiscal policy of about 3 per cent of GDP, while Mexico was affected by fiscal crisis control expenditure prioritizing anti-inflation policy. The credit crunch had repercussions on internal demand and the deceleration of foreign direct and portfolio investments aggravated the impact of the contraction of exports revenue. Both countries devalued their currencies. The positive effect of devaluation on exports may not appear since external demand will remain feeble for quite some time.

Table 1.1   Effects of the global financial crisis in Mexico and Chile, rates of growth of GDP, employment and labour incomes

	MEXICO					CHILE				
	Total GDP	GDP Capita	MRS	RMW	Unmplyt.	Total GDP	GDP Capita	MRS	RMW	Unmplyt.
2000	6.6	5.1	6.0	0.7	3.4	4.5	3.2	1.4	7.1	9.7
2001	-0.2	-1.2	6.7	0.4	3.6	3.4	2.2	1.7	3.8	9.9
2002	0.8	-0.2	1.9	0.7	3.9	2.2	1.0	2.0	2.9	9.8
2003	1.4	0.3	1.4	-0.7	4.6	3.9	2.8	0.9	1.4	9.5
2004	4.0	3.0	0.3	-1.3	5.3	6.0	4.9	1.8	2.8	10.0
2005	3.2	2.2	-0.3	-0.1	4.7	5.6	4.4	1.9	1.9	9.2
2006	4.8	3.7	0.4	0.0	4.6	4.6	3.7	1.9	2.5	7.8
2007	3.2	2.2	1.0	-0.7	4.8	4.7	3.7	2.8	1.8	7.1
2008	1.3	0.7	2.2	-2.1	4.9	3.2	2.2	-0.2	-0.1	7.8
2009	-6.7	-7.7	0.6	-1.0	6.8	-1.8	-2.8	4.8	-1.7	9.8

Source: Own elaboration based on: CEPAL/ECLAC, 2009b. MRS=Medium real wages; RMW=Real minimum wage.

What is more worrisome is the long-term loss of income. It is predicted that Latin American GDP in 2014 will be 3 per cent lower than that projected before the crisis (IMF, 2009). In any case, the level of economic activity will remain depressed and the recovery may be a jobless one. In addition, if employment and wages are not recovered, domestic demand will remain feeble and effects of the recovery will not be felt (ILO, 2009).

2.   Evolution of poverty and employment

2.1   The long-term trajectory of poverty 1970-2009

As noted above, both Chile and Mexico reduced their rates of poverty and indigence in the periods before the debt crisis - Chile up to 1970 and Mexico from 1970 to 1984 (Table 2.1). The trajectories of GDP, productivity and employment have an important impact on the incidence of poverty and indigence, as well as on the pattern of income distribution. It is

regrettable that due to a lack of adequate information, it is not easy to make a comparative analysis of the trends in poverty and income concentration and for longer periods. Information from 1970 is scattered and it has only become more systematic since 1990[6].

The effects of the various crises suffered by Chile and Mexico and the costs of "the lost decade" are clearly revealed by the patterns of poverty and indigence during the period 1985-95. Chile experienced a crisis in 1973 and another in 1982, while Mexico suffered three crises (1982, 1986 and 1995/5); in both countries, the result was an increase in poverty levels. In Chile, from 1970-90, the incidence of poverty and extreme poverty escalated to 38 and 13 per cent, respectively. In Mexico, the increases in both poverty and indigence were more severe, and by 1996, the incidence had reached 53 and 22 per cent of the population, respectively (Table 2.1)[7]

In Chile, poverty started to decline when the democratic government initiated distributive fiscal reforms. These policies, accompanied by high economic growth, allowed the country to reach once again – from 2003 to 2006 - the low level of poverty recorded in 1970. Chile succeeded in reducing the incidence of poverty and indigence by nearly 50 per cent, and Mexico by one third. This cut in poverty had less to do with economic growth and its trickle-down effect than through relief programmes and remittances (ECLAC, 2006). Growth in Mexico has been relatively less pro poor than in Chile and the impact of poverty programmes is less clear-cut than in Chile. In effect, The National Council for Evaluation of Social Development Policy (CONEVAL, 2009) suggests that the majority of social programmes have regressive effects. Scott (2008) and Valencia et al. (2009) reached an identical conclusion

Table 2.1   Incidence of poverty and extreme poverty in Chile and Mexico, 1970-2008

| | Chile | | | | | | | Mexico | | | | | |
| | Poverty a/ | | | Extreme poverty | | | | Poverty a/ | | | Extreme poverty | | |
Year	Total	Urban	Rural	Total	Urban	Rural	Year	Total	Urban	Rural	Total	Urban	Rural
1970	17	12	25	6	3	11	1970	34	20	49	12	6	18
1987	38	37	45	14	13	16	1977	32	ND	ND	10	ND	ND
1990	38.6	38.5	38.8	13	12.5	15.6	1984	24	28	45	11	7	20
1994	27.6	27	31.1	7.6	7.1	9.9	1994	45.1	36.8	56.5	16.8	9	27.5
1996	23.2	22	30.4	5.7	5.1	9.4	1996	52.9	46.1	62.8	22	14.3	33
1998	21.7	20.7	27.5	5.6	5.1	8.6	2000	41.1	32.3	54.7	15.2	6.6	28.5
2000	20.2	19.7	23.7	5.6	5.1	8.4	2002	39.4	32.2	51.2	12.6	6.9	21.9
2003	18.7	18.5	20	4.7	4.4	6.2	2005	35.5	28.5	47.5	11.7	5.8	21.7
2006	13.7	13.9	12.3	3.2	3.2	3.5	2006	31.7	26.8	40.1	8.7	4.4	16.1
2008	-	-	-	-	-	-	2008	34.8	29.2	44.6	11.2	6.4	19.8

Source: Own elaboration based on ECLAC, Economic Development Division. Percentages of total population.

Chile has put a major effort into reducing rural poverty and rural indigence. Urban poverty has fallen by 13 percentage points since 1994 but remains higher than in 1970. Rural poverty has decreased by 17.8 percentage points, and in 2006 was half that of the level registered in 1970. Rural urban migration may be one explanation for this; another might be the increase in exports of agricultural, forestry and fishery products, as well as processed primary products (cellulose, wine, fruit, vegetable and fish preserves, etc.).

[6] ECLAC publishes data on poverty from 1990 in the *Social Panorama of Latin America*. In earlier publications, data from 1970 are scattered, for instance in Oscar Altimir's earlier studies.

[7] It is unfortunate that Chile has not published new data on poverty, as has Mexico. That is the reason why we have only updated the figures on poverty for Mexico.

The high levels of poverty Chile registered in 1987 and in 1990 (38.0 and 38.6 per cent, respectively) were cut by almost half in 2006, which was mainly due to the dramatic fall in rural extreme poverty, from 16 per cent in 1987 (and 15.6 per cent in 1990) to just 3.5 per cent in 2006. One explanation of the reduction of poverty in Chile is the positive evolution of real wages. From 1990 to 2005, real medium salaries rose at an annual rate of 6.8 per cent, while minimum real wages expanded at an annual rate of 3.7 per cent from 1990 to 2003.

In Mexico, poverty only really started to go down after the crises of 1994-1995, when it increased to levels well above those of 1970 (Table 2.1). In 1996, more than half of the population lived in poverty and 22 per cent in extreme poverty. This may be attributed mainly to the collapse of GDP and employment, the massive devaluation of December 1994 and the inflation that ensued. Urban poverty fell by 20 percentage points and rural poverty by 22 points, but the rural-urban divide remains sharp. Rural poverty still covers 40 per cent of rural population. Rural indigence is almost four times larger than urban extreme poverty.

From 2000 to 2006 Mexico witnessed a significant decline in poverty, which came to an end in the 2006-2008 period, when total poverty increased by 4.8 percentage points (as shown in Table 2.3, based on data published by CONEVAL (2009) and the results of the 2008 National Survey of Household Income and Expenditure, published in mid 2009). It is interesting to notice that CONEVAL gives higher poverty levels than the Economic Commission for Latin America and the Caribbean (ECLAC), as may be seen by comparing Tables 2.1 and 2.2. CONEVAL revealed the severity of the worsening social conditions in Mexico between 2006 and 2008; these were present even before the 2009 crisis that affected the country with particular harshness. It also illustrates the frailty of the effects of the programmes to ease poverty, based mainly on cash transferences.

According to CONEVAL, over fifty million Mexicans, accounting for 47.4 per cent of the total population, lived in poverty in 2008. This represented an increase of 5.9 million persons in only three years, out of which 5 million were in the extreme poverty category (Table 2.2)[8].

Table 2.2   Incidence of poverty and extreme poverty in Mexico, 1992-2008

Year	Thousands persons			In % of total population		
	Food	Capabilities	Capital	Food	Capabilities	Capital
1992	18579	25772	46139	21.4	29.7	53.1
1994	19018	26909	47045	21.2	30.0	52.4
1996	34654	43445	63967	37.4	46.9	69.0
1998	31682	39751	60671	33.3	41.7	63.7
2000	23722	31216	52701	24.1	31.8	53.6
2002	20140	27085	50406	20.0	26.9	50.0
2005	18954	25670	48896	17.4	24.7	47.2
2004	17915	25435	48625	18.2	24.7	47.0
2006	14428	21657	44678	13.8	20.7	42.6
2008	19459	26765	50551	18.2	25.1	47.4
? 06 - 08	5031	5108	5873	4.4	4.4	4.8

Source: CONEVAL (2009).

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[8] Unfortunately, there are not recent figures available for Chile.

One question emerges with respect to the contrasting experiences of the two countries in relation to urban and rural poverty. Chile has a lower land concentration, with a Gini coefficient of land property of 50 per cent, which is relatively low by international standards - according to Deininger y Olinto (2000). Despite the setback in the agrarian reform carried out between 1976 and 1982, a more equal land distribution exists, characterized by a large number of modern and highly productive medium and small producers. In Mexico, we find a different picture. The Gini coefficient is higher, at nearly 65 per cent. A dual sector has emerged with a rather small number of large producers, which use capital very intensively and produce for exports or for industry (and received all the stimuli created for the industry during the ISI (Tomich et al., 1995). In such an environment, the rural poor have always suffered from an unequal access to land, financial resource, irrigation, technology and education. Migration, especially international migration, attenuates but does not eliminate discrimination. Even after including remittances and non-agricultural income, it is the land and size of the plots that explain why rural poverty and extreme poverty remain so acute. There is a significant negative correlation between land concentration and growth, and a significant positive correlation between land concentration and income concentration, suggesting that concentration of wealth has growth-limiting effects and tends to intensify concentration of income. In addition, a high level of land concentration (and other assets) reduces the effects of policies to stimulate aggregate growth such as investments in human capital (Hoff, et.al., 1993). Land concentration induces permanent effects on income concentration and poverty (Frankema, 2006). Apart from the concentration of income, it is the concentration of assets that causes inequality of growth, by making it impossible to access credit markets to finance productive indivisible investments (Deininger and Olinto 2002).

2.2 Employment

Employment is the variable we consider central to understanding the link between GDP growth and poverty, in line with the ILO studies on employment and poverty. To better understand that link, we have created two independent models to try and explain the trajectory of employment in both Chile and Mexico. The first model analyses the trajectory of employment as a dependent variable and the ones frequently used in growth models as independent variables. The second model considers the factors explaining the growth of GDP, since it is, accordingly to the first model, the most important variable behind the trajectory of employment. We present the models with all the variables and results in Annex 1 and 2.

In both countries, employment growth depends primarily on the expansion of GDP and on gross fixed capital formation (GFCF), which is the most important factor for economic growth. Nevertheless, in Mexico, the GFCF as percentage of GDP has practically stagnated during the past 25 years and investments per worker have declined. Chile registered increases in both areas - and its GDP grew at a fast rate from 1982 onwards, while the Mexican economy faltered. Certain characteristics are specific to each economy. For the Mexican economy, the trajectory of the United States economy and imports are crucial, whereas in Chile the most important growth factors are internal, such as manufactures as percentage of GDP and price stability.

2.3 Gross activity rate (GAR)

In addition to the previous analysis, it is necessary, in order to understand the evolution of the Chilean and Mexican labour markets and the trajectory of urban unemployment, to observe the gross activity rate (GAR), i.e. the relationship between the workforce (the population over 12 years of age wanting to work) and the total population. The rise in participation rates is evident during the 1990s in Chile and Mexico (Table 2.3).

Table 2.3   Chile and Mexico: Gross activity rate (GAR) and urban unemployment rate (UUR)

	Chile		Mexico	
	UUR1	GAR2	UUR1	GAR2
1980	11,7	50,3	4,5	55,9
1990	9,3	54,1	2,7	58,5
1995	6,4	55,4	5,5	60,1
2000	9,9	54,5	3,6	60
2008	7,7	52,4	4,9	58,7
2009	9,8	53,1	6,8	58,7
80 - 09	10,4	53,6	4,4	58,9
80 - 90	13,7	52,0	4,1	57,4
90 - 09	8,3	54,6	4,5	59,8
2008-09	8,8	52,8	5,9	58,8

Source 1980-2008: Own elaboration based on: ECLAC: Economic Development Division. For the year 2009: INEGI, ENOE, Nov 2009; Chile, Central Bank of Chile, database 2009.

 Annual average growth in percentages.

In Mexico and Chile GAR increased from 1980 up to the mid 1990s, when the economies of these countries were in crisis. It began declining once again in the mid 1990s, when the economies started to grow, especially in the latter years of the decade. In Mexico GAR is substantially larger and unemployment lower than in Chile. The explanation of the relatively low Mexican unemployment, even during the crisis, is low incomes and the lack of unemployment insurance (Ros, 2005). In brief, there is a diversified picture with increasing levels of participation, which in November 2009 reached 53 per cent for Chile and 59 per cent for Mexico (see Table 2.3).

Mexico shows a systematically higher participation rate in all age groups, but especially in the 25-34 years age group for women and the 25-49 years age group for men (ECLAC, 2009a). Mexico has a relatively higher participation rates for workers in the 15-24 years age group, which suggests an early entry into the labour market and a lower rate of young people attending school or training programmes than in Chile. Mexican young women (15-24 years old) start working in larger proportions than in Chile; and more women, aged 50years or more, keep working due to the lack of social security.

2.4   Open urban unemployment rate (UUR)

After the economic crisis of 1981, Chile experienced a drastic increase in unemployment, which rose to above 20 per cent in 1982. At that point, the Government introduced several measures to bring it down (Edwards et al., 2000). Salary indexation to inflation was eliminated, laws for the layoff of workers were liberalized, and contributions to social security were reduced. In addition, the rules for enterprise bankruptcy and the opening of new economic units were relaxed and the banking system was deregulated. With these reforms, but not necessarily as a consequence, unemployment fell to a one digit figure; it remained this way until 2008, and then exceeded 10 per cent in 2009. Chile combines lower but increasing rates of participation with lower but increasing unemployment rates, which registered negative annual average rates of growth during the 1990-2007 period.

No labour reforms have been approved in Mexico due, among other reasons, to political resistance in Congress and the strength of public sector unions - some of them strong allies of the Government, such as the public sector teachers' unions and unions of workers in the state oil monopoly (PEMEX) and Telephones of Mexico (TELMEX). Nevertheless, there is a de facto reform, resulting in a worsening of the situation of the labour market: a fast increase in temporal jobs, on-call work and employment with no social security.

From Table 2.3, it is clear that Chile has a lower GAR[9], which means that Chile keeps larger labour reserves than Mexico. This makes it possible to increase productive capacity without risking wage inflation. Furthermore, there was a drastic fall in unemployment starting in 1982, which coincided with a decrease in GAR and lower pressure upon the labour market. This decrease in GAR may well have been caused by abandoned expectations of employment or because the rise in wages made it unnecessary for more family members to join the labour force, which would have increased the rate of dependency.

The Mexican case seems to be different: urban unemployment is lower than in Chile and remained below 5 per cent until 2008; it then increased to 6.3 per cent in 2009 when GDP fell by 8 per cent. Unemployment increased in the years before and immediately after the currency devaluations of 1982 and 1995, and again in 2003. A more competitive exchange rate promotes employment generation but reduces real wages. Participation rates grew constantly from 1980 to 1998, when they started falling pari-passu with employment, a path that may suggest that many people gave up hope of finding work. The Mexican economic crises had such a negative impact on the labour market that it is nowadays questionable whether the employment indicators give a true diagnosis of the state of the economy. That appraisal is evident from the relatively low rate of urban unemployment during the crises of 1983, 1995, 2004 and 2009, when unemployment remained well below 8 per cent but informal and precarious employment expanded. The Mexican labour market adjusts to shocks and crises through wage reductions, and the Chilean labour market by means of unemployment and wage reductions. These diverging adjustment routes may signal the willingness of the Mexican labour sector, organized into powerful unions, to reach agreements with the Government, and of the employees to accept reduced minimum and medium wages, both of which have been observed in periods of crisis (Lustig, 1992; Ros, 2005; Thorp, 1998; and López, 2000). In Chile, the labour reform and liberalization of the labour market were intensive, which may explain the dramatic increases of unemployment and the drastic fall in salaries. Urban unemployment in both countries tends to converge at low levels.

2.5 Evolution of real salaries

With advances in education and the economic expansion of exports ushered in by the new economic model, it was expected that there would be a substantial increase in labour productivity and in employment and wages. These effects would be brought about by a more basic change: As the economy opened to international competition, it would move towards the production of goods with a comparative advantage and more labour-intensive methods requiring more labour, the relatively plentiful factor. As the process advanced, the participation of the retributions to labour in income would increase, while the participation of capital contracted. That is, in developing countries, liberalization would increase the elasticity of labour, "…this will ensure that globalization will improve the elasticity factor as well as growth" (Osmani, 2003). As we have already discussed, the effects of trade liberalization on employment have not, for several reasons, been as expected in Latin America Stallings, et., 2000). We shall analyse the effects on wages and incomes.

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[9] GAR is defined as the economically active population as percentage of total population. That excludes students and all social groups that do not integrate the labour market.

2.5.1 Evolution of real minimum and medium salaries

Both countries, with variations in time and intensity, show the effects of the lost decade on remunerations and a relatively larger recuperation of minimum salaries, starting in the early 2000s.

Figure 2.1 presents the evolution of the index of real minimum wages (RMW) and medium real salaries (MRS) for the period 1980-2007, with year 2000 as the basis for the index; Table 2.4 gives the annual average rates of change.

A dramatic fall in the RMW characterizes the evolution of the Mexican labour market. The index of the minimum wages fell from 312 in 1980 to 98 in 2009, deteriorating at an annual average rate of more than 3.8 per cent. Even during the period 2000-07 when GDP expanded, minimum wages declined - although at a lower pace (annual rate -1.15 per cent) (Figure 2.1). Mexican medium real salaries (MRS) fared somewhat better. They grew at an annual rate of 0.2 per cent during the period 1980-2009, a rhythm which accelerated after 2000 - reaching, for the period 2000-05, an average rate of growth of 1.3 per cent. Nevertheless, we might conclude that even MRS did not improve in the last 25 years. The 2008-09 crisis hit Mexican minimum wages which fell by 0.7 per cent, while medium wages increased by 0.6 per cent (ECLAC, 2009b).

In Chile, both categories of remuneration deteriorated from 1982 to 1986. Chilean medium real salaries increased during the 1980-2009 period at an annual rate of 2.2 per cent, slightly lower than the increments registered for the minimum wages, a trend that would help to reduce the impact of the economic downturn upon the poorest workers (Figure 2.1). The most critical years for Chilean salaries was the 1982-1991 period, when minimum wages had negative growth rates and medium salaries registered the lowest increment. During this period, the Chilean economy registered the smallest annual expansion, suggesting a high and negative elasticity of wages to GDP.

The past two years - 2008 and 2009 – have signalled a different trend for Chilean wages and salaries. In 2007 minimum real wages stagnated; they decreased by 1.93 per cent in 2009, while medium salaries increased by 4.8 per cent. In 2009, the minimum wage was adjusted to 3.7 per cent below the inflation rate, calculated to be 8.9 per cent. The critical year 2009 puts an end to the 20 years' trajectory during which the minimum wage registered substantial increases (Marinakis, 2009).

 Only intensive economic growth can stimulate sustainable increments in labour incomes. In all periods presented in Figure 2.1, salaries and wages grew at a slower pace than the economy, showing that labour rigidities did not constrain growth in the economies being examined. The GDP elasticity of wages gives an indication of the relation between GDP growth and wages. In the case of Mexico, the elasticity for minimum wages was larger than for medium salaries, and always negative, demonstrating that wages decrease when the economy expands, while minimum real wages increase.

Figure 2.1 Chile and Mexico: Index of real minimum wages (RMW) and medium real salaries (MRS). 1980-2009; Index: year 2000=100
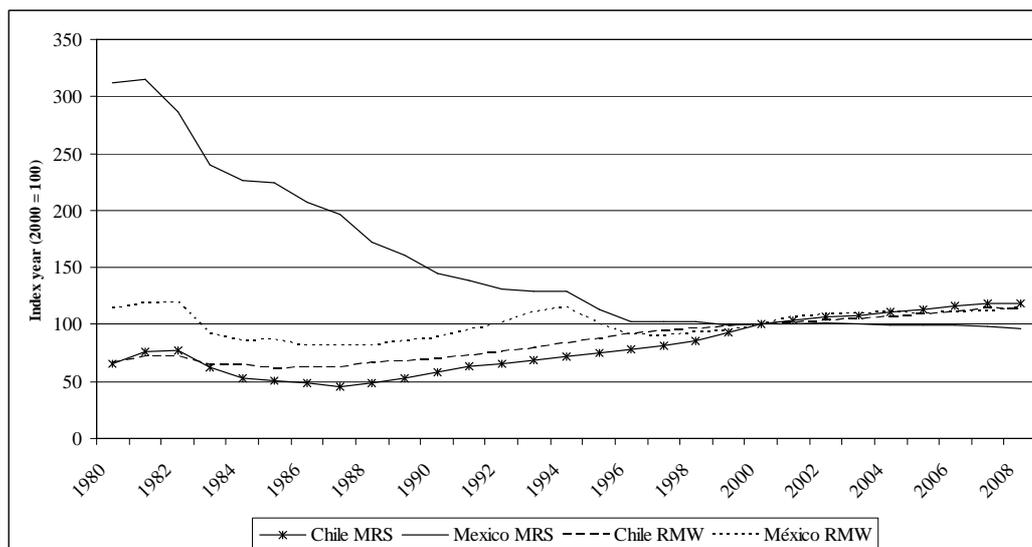
The trend of Chilean wages, presented in Table 2.4, confirms the improvement in the quality of work in this country, which is later taken up in Chapter 5. In Mexico, the growth in employment has been at the cost of salaries and has not improved the quality of work. In Chile, slower growth accompanied by higher elasticity (the trend in 1982-91) induced the contraction of minimum wages.

Table 2.4 Average yearly growth rate of medium real salaries (MRS) and real minimum wages (RMW) (percentages) and GDP elasticity, 1981-2009

	Chile			Mexico		
	81 - 91	91 - 09	81 - 09	81 - 96	96 - 09	81 - 09
MRS	0,99	2,89	2,10	-1,04	1,00	0,25
RMW	0,15	3,79	2,22	-6,58	-1,17	-3,89
GDP ?%	4,32	5,07	4,68	2,00	3,75	2,74
Elasticity Salaries-GDP						
MRS	4,34	1,75	2,23	-1,93	3,76	10,99
RMW	28,31	1,34	2,11	-0,30	-3,19	-0,70

3. The reforms

3.1 Some background aspects

Chile and Mexico are among the most liberal economies of the medium-income countries in Latin America. Both countries have drastically reduced tariffs, eliminated non-tariff trade barriers and reduced the economic role of the state by selling public enterprises – apart from the key state companies producing copper in Chile, and oil and electricity in Mexico. They have also deregulated transport, telecommunications, banks and financial institutions, and cut back on public investments. To varying degrees, they have privatized social

security and reformed health care and education. The Mexican Government has not yet succeeded in passing legislation to reform the labour market, which the Chilean Government achieved in the 1970s. Nevertheless, a de facto labour reform has transformed Mexican labour relations. The process of liberalization has further opened up the country to foreign capital flows. The movement of goods, services and capital is, therefore, practically free. Although the adjustment and trade liberalization policies set out to improve welfare, poverty and inequality reduction were not the main concern of the reformers. The motto of the new economic policy paradigm was "stabilize, privatize, liberalize" (Commission on Growth and Development 2008). These principles are at the core of the agreements Mexico and Chile signed with the United States.

Chile initiated the reforms in the early 1970s in the wake of a deep political and social transformation brought to an end by the military coup in September 1973. Mexico launched its reforms in 1982 in response to the debt crisis. Chile (in 1973) and Mexico (in 1982) were affected by fiscal, foreign trade and current accounts deficits and inflation, and both had unsustainable fiscal and current account deficits. Their exports were declining in volume and in value, and massive outflows of capital drained their reserves (Thorp, 1998; Scott, 1996; Lustig, 1994). In 1973, Chilean inflation reached 173 per cent, which far exceeded Mexican inflation when the debt crisis exploded in that country (nearly 30 per cent).

The Chilean economic model, initiated in 1974, was the first example of the outward liberal model rationalized in the Washington Consensus ten years later (Bulmer-Thomas 1996). Chile provides thirty years of experience of the liberal model, a period during which several changes were introduced to correct errors or to accommodate the economy to external shocks. The democratic regime, which came into power in 1990, was committed to free trade; it reassured investors' confidence and introduced distribution policies to reduce poverty (Scott, 1996).

For 70 years, Mexico had a single-party political system with strong presidential powers and full control of the legislative and judiciary powers. The President had considerable political freedom to introduce the stabilization programmes, the structural reforms and NAFTA. The liberalization process gathered pace in 1986 when Mexico negotiated its entry to the General Agreement on Tariffs and Trade (GATT), and accelerated with the implementation of NAFTA in 1994. Mexico constitutes a unique example for evaluating the effects of North-South regional economic integration and provides lessons to other developing countries that have signed, or are negotiating, similar trade agreements.

In theory, the successful liberalization of trade policies should bring about a sustained expansion of the external coefficient to GDP. Assuming that the export sector has higher productivity than the rest of the economy, those countries that reallocate resources towards exports should grow faster. The theory rests on the assumption of full employment and perfect markets and no movement of factors across countries. Today capital moves freely but the movement of labour is penalized.

Since liberalization and export promotion are the cornerstones of the new economic model, we shall pay special attention to them (Fitzgerald, 1996). While not overlooking the importance of stabilization and adjustment measures, we consider that inflation control, the balance in fiscal and external accounts and exports growth are not the final aims of economic policy but the means towards the real goals: increased social welfare and a reduction in inequality and poverty.

3.2 A tale of two countries: Chile and Mexico – long-term economic growth

Before analysing the economic performances of Chile and Mexico, it is interesting to examine them from a long-term perspective and to compare them with other Latin American countries. By doing so, we shall illustrate some prevailing differences that may help to explain present trends. Two growth patterns may be observed in Table 3.1. All Latin American countries, apart from Venezuela, registered their lowest rate of economic growth during the 1901-45 period (left panel, Table 3.1). By contrast, the import substitution period (1945-82) was the phase of the fastest economic expansion for Mexico, Brazil and Colombia, while Chile marked its lowest growth. In the second liberal phase (1982-2008), Chile achieved the highest economic expansion in its history, while Mexico showed its worst performance in 108 years.

To illustrate convergence, the right panel in Table 3.1 presents growth rates in proportion to the United States. It may be seen that the economies of some Latin American countries converged with the United States during the import substitution period. However, during the liberal periods (1900-45 and 1982-2006) there was divergence, since their growth rates were lower than that of the United States. Chile would prove that poorer countries, when they open their economies, tend to grow faster than richer ones, while Mexico would confirm the contrary.

Table 3.1   Average growth rate of per capita GDP of some Latin American countries: 1900-2008

Country	Average Growth Rate %				Relative to USA Average Growth Rate			
	1901 - 1945	1945 - 1982	1982 - 2008	1901 - 2008	1901 - 1945	1945 - 1982	1982 - 2008	1901 - 2008
Argentina	1.18	1.32	1.52	1.42	0.45	1.13	0.79	0.69
Brazil	1.71	3.36	1.14	2.19	0.65	2.87	0.59	1.06
Chile	1.55	1.36	3.14	1.99	0.59	1.16	1.64	0.97
Colombia	1.55	2.19	1.69	1.83	0.59	1.87	0.88	0.89
Mexico	1.11	2.98	0.68	1.72	0.42	2.55	0.35	0.83
Peru	2.48	2.15	0.90	2.02	0.94	1.84	0.47	0.98
Uruguay	1.58	1.36	1.84	1.68	0.60	1.16	0.96	0.81
Venezuela	4.61	2.21	0.48	2.70	1.75	1.89	0.25	1.31
Total 8 countries	1.72	1.92	1.38	1.76	0.65	1.65	0.72	0.85
USA	2.63	1.17	1.91	2.06	1	1	1	1

Source: A. Maddison (http://www.ggdc.net/maddison/) and The Conference Board (http://www.conference-board.org/), consulted in Nov. 2009.

This contrasting path that emerged in the early 1980s has continued to the present day: Chile is converging towards the United States' economic level and Mexico is distancing itself from it. A quite controversial finding is that the implementation of NAFTA did not reverse that tendency. In 2008, the gap between the Mexican and the United States economies was even wider than in 1994 when the agreement was implemented. Chile, which is a very open economy but had no trade agreement with the United States before 2003,[10] shortened the distance at considerable speed – only to slow down after 1998.

The relative trends of the two economies are illustrated in Figure 3.1. In 1940, Mexican GDP per capita represented 57 per cent of the Chilean GDP per capita in purchasing power parity (PPP) terms. In 1982, the Mexican per capita GDP was 20 per cent higher than that of the Chilean. After the implementation of the reforms

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[10] The US-Chile trade agreement was signed in June 2003 and came into force in January 2005.

and NAFTA, the Mexican economy decelerated while the Chilean grew faster and surpassed that of Mexico, restoring the ratio existing in 1940. The green line shows the convergence between the economic levels of the two countries, as the ratio of the Mexican to the Chilean per capita GDP. The right axis depicts the ratio.

Figure 3.1   Evolution of per capita GDP of Chile and Mexico, 1940-2008
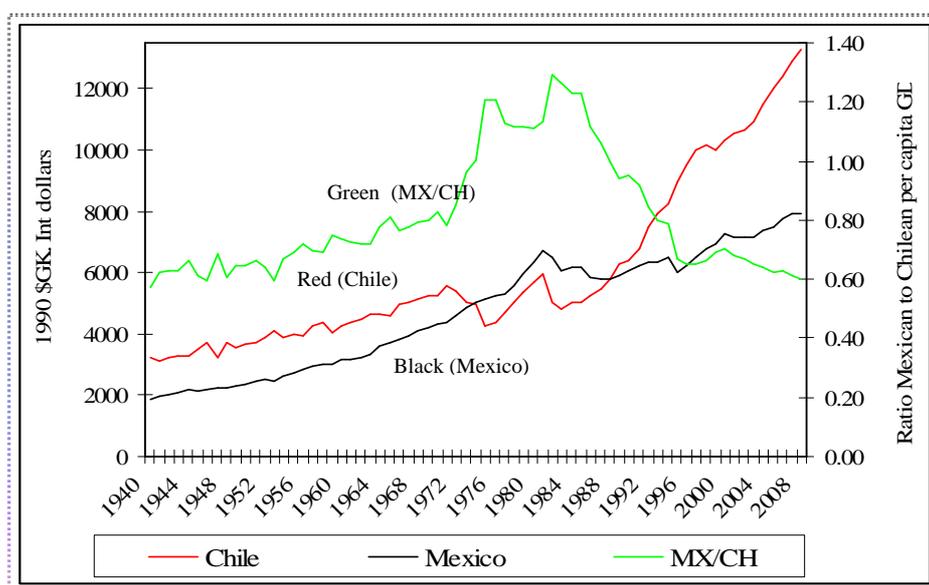
3.3   What factors have contributed to these differences?

To try and explain the different paths followed by the Chilean and Mexican economies, we shall present some of the changes that have taken place in each country. We shall begin by describing the liberalization process and then report on the changes in export structure and in some macroeconomic variables, such as productivity growth, fiscal and capital account balance, public debt and inflation.

3.3.1 The opening of the economies to external competition

In general, reforms to foreign trade regimes were comprehensive. Chile started implementing its liberalization process during the 1970s, at least ten years before Mexico. Chilean liberalization was radical due to its uniform nature. Maximum and average tariffs in force in October 1973, were lowered from 220 and 94 per cent, respectively, to 10 per cent for the whole tariff universe in 1979; these rates were retained until the 1982 crisis, (French-Davis et al., 2003). Mexico reduced the maximum rates from 100 to 20 per cent between 1985 and 1990, while intermediate rates fell from 24 to 13 per cent, and it compressed tariff dispersion from 18 to 4 per cent. In both countries, the non-tariff barriers practically disappeared in the early years of the reforms (Edwards, 1994). The incentives of the import substitution model were reduced or eliminated (Edwards, 1998; Stallings 2003).

Since 2006, Mexican imports with its main partners – United States, Canada and Europe – have been free. Almost 70 per cent of Chilean imports enter duty-free (WTO, 2009). Chile maintains a policy of null upgrading of tariffs, in accordance with the degree of processing,

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and encourages investments only in activities able to compete with imports. Mexico protects agriculture relatively more than manufactures and, within the former sector, tariffs are higher for more processed goods. The same pattern is repeated in manufactures, although to a lesser extent than in agriculture.

Mexico and Chile show high levels of exposure to international competence, indicated by the external coefficient of GDP (Table 3.2). In 2008, the external coefficient of Chilean GDP was 86.2 per cent, and that of Mexican GDP 59.5 per cent. Chile even had a larger external coefficient of GDP during the import substitution process, when it had higher import tariffs than the majority of Latin American countries (Thorp, 1998; Bulmer-Thomas, 1994.). Another important element is that the Chilean export coefficient has been higher than the import coefficient and therefore, since 1980, Chile has had a positive trade balance as percentage of GDP, which has increased consistently since 1985. Mexico shows a persistent trade deficit, which is the result of devaluations. The large import coefficient of the Mexican economy has resulted in a high-income elasticity of demand for imports that stands at about 3.5 per cent. This makes it difficult to achieve the high rates of economic growth needed to generate employment for all the new entrants to the labour force and to preserve a moderate current account deficit. The severity of crisis and the contraction of external trade are evident in the relatively lower values of the external coefficient in 2009.

Table 3.2   External coefficient of GDP in Chile and Mexico, 1980-2009

Year	Import		Export		Total		Balance	
	Chile	Mexico	Chile	Mexico	Chile	Mexico	Chile	Mexico
1960	15,7	11,6	13,5	8,5	29,2	20,1	-2,2	-3,2
1965	12,6	9,5	13,6	7,6	26,2	17,2	1,0	-1,9
1970	14,0	9,7	14,6	7,7	28,6	17,4	0,6	-1,9
1975	27,4	9,6	25,4	6,9	52,8	16,5	-2,0	-2,7
1980	27,0	13,0	22,8	10,7	49,8	23,7	-4,2	-2,3
1985	25,7	10,3	28,1	15,4	53,9	25,7	2,4	5,1
1990	30,6	19,7	34,0	18,6	64,5	38,3	3,4	-1,1
1995	27,1	27,7	29,3	30,4	56,4	58,1	2,2	2,7
2000	29,7	32,9	31,6	30,9	61,3	63,9	1,9	-2,0
2006	30,9	45,6	45,6	31,9	76,3	65,1	14,7	-13,7
2007	34,4	47,1	48,7	31,6	81,5	65,6	14,3	-15,5
2008	40,7	45,5	53,7	28,6	86,2	59,5	13,0	-16,9
2009	29,3	36,6	43,0	23,7	65,9	52,6	13,7	-12,9

Source: Own elaboration based on information from the World Bank, World Development Indicators (WDI) and ECLAC, (2009b).

It is evident that the 2009 crisis has affected the external sector in both countries. Exports have contracted due to the fall in the international prices of all commodities, and imports have declined because of the reduced economic activity in both Chile and Mexico. The reduction of the external coefficient does not reflect a return to protectionist practices but rather the drop in international prices and/or in the volume of external sales. The devaluation of the currencies and the plunge in demand can explain the contraction of imports. Chile has managed to preserve it positive trade balance, while Mexico is showing an increasing deficit - which signals the fragile structure of its productive sector.

Since there is no theoretical definition of the optimal degree of openness, we cannot state that either Chile or Mexico are "scarcely" or "very open", but we can reasonably conclude that both have substantially advanced in openness, submitting production of tradable goods to a greater and growing external competition. There should normally be some evidence of the effects of the openness of external trade on GDP growth, productivity and productive capacity, employment, value added and salaries. We shall be examining this.

3.3.2 Changes in the structure of exports and imports

There is a great difference between Chile and Mexico in the structure of exports. In 2008, manufactures accounted for 79.5 per cent of Mexican external sales, some points down from the record level registered in 2000. Of these, 62 per cent belonged to the category of intermediate and high technology, while 24.3 per cent were high-technology goods. In 2006, Chilean exports were concentrated in primary products and resource-based manufactures that represented 90 per cent of total sales, suggesting that Chile specializes more than Mexico in exporting primary products and resource-based manufactures. The gap with Mexico becomes wider is we consider exports of medium- and high- technology manufactures, which in Chile accounted for 5.2 per cent of its total exports - while Mexico registered 70.8 per cent. Mexico imports a larger proportion of components to re-export after processing. The trade balance in manufactures for both countries was negative but smaller in Mexico. The high deficit for Chile reflects the tariff structure to which we referred earlier.

Table 3.3   Chile and Mexico, structure of exports: 1987-2008

	CHILE					MEXICO						
	1987	1990	1995	2000	2006	1987	1990	1995	2000	2006	2007	2008
Exports												
Primary Products	36.5	31.8	35.0	34.3	37.8	51.7	46.8	16.4	12.6	17.6	17.9	18.8
Manufactures	59.0	63.9	60.5	61.3	59.2	47.8	52.4	82.9	87.0	81.3	77.6	79.5
Resource based manufactures	54.8	58.0	53.2	51.7	52.6	14.0	13.0	8.3	5.9	8.0	8.2	8.8
Low technology	1.6	2.4	2.8	3.0	1.4	6.5	7.1	14.1	15.3	11.3	10.3	9.9
Medium technology	2.4	3.0	4.1	6.0	4.8	24.1	27.8	39.9	37.7	36.6	35.5	35.1
Hihg technology	0.2	0.6	0.4	0.7	0.3	3.0	4.5	20.6	28.2	25.4	23.6	25.7
Other	4.5	4.3	4.5	4.3	3.1	0.5	0.8	0.7	0.3	1.1	4.5	1.7
Total	100	100	100	100	100	100	100	100	100	100	100	100
Imports												
Primary Products	16.2	17.1	13.9	21.2	25.3	14.8	13.1	6.3	5.5	6.6	6.9	8.4
Manufactures	81.4	81.2	84.2	77.2	74.0	84.0	75.3	85.8	90.9	91.4	86.5	89.4
Resource based manufactures	12.9	12.8	13.2	13.7	15.9	21.2	18.7	12.9	11.4	15.4	16.6	18.2
Low technology	12.4	11.0	15.1	15.5	13.0	8.8	12.1	18.7	17.8	14.8	13.6	13.1
Medium technology	46.3	46.1	44.3	33.9	33.2	38.3	31.0	34.6	37.4	36.9	35.6	34.4
Hihg technology	9.8	11.3	11.6	14.0	11.9	15.7	13.4	19.7	24.4	24.3	20.7	23.8
Other	2.4	1.7	1.9	1.5	0.7	1.2	11.6	7.9	3.6	2.0	6.6	2.1
Total	100	100	100	100	100	100	100	100	100	100	100	100
Trade Balance												
Primary Products	20.2	14.7	21.1	13.1	12.5	36.9	33.7	10.1	7.1	11.0	11.0	10.4
Manufactures	-22.4	-17.3	-23.7	-15.9	-14.8	-36.2	-22.9	-2.9	-3.9	-10.1	-8.9	-9.9
Resource based manufactures	41.9	45.2	40.1	38.0	36.7	-7.2	-5.8	-4.6	-5.5	-7.4	-8.4	-9.4
Low technology	-10.8	-8.6	-12.3	-12.5	-11.6	-2.3	-5.1	-4.6	-2.5	-3.5	-3.3	-3.2
Medium technology	-43.9	-43.1	-40.2	-28.0	-28.4	-14.1	-3.2	5.4	0.3	-0.3	-0.1	0.7
Hihg technology	-9.6	-10.8	-11.3	-13.3	-11.6	-12.6	-8.9	1.0	3.8	1.1	2.9	2.0
Other	2.1	2.6	2.6	2.8	2.3	-0.7	-10.8	-7.2	-3.2	-0.9	-2.1	-0.4

Source: Own elaboration based on ECLAC: *Panorama of the Internacional Insertion of Latin America and the Caribbean*, Statistical Annex, consulted in September 2009.

3.3.3 Changes in the structure of production

Some interesting facts emerge when comparing the structure of GDP of the two countries since 1960. First, we may observe the smaller contribution of agriculture and manufactures in Chile compared to Mexico and, second, the larger share of the Chilean mining and construction sectors. In Chile, two tendencies are noticeable after 1973: the lower recuperation of agriculture and mining as sources of GDP; and the continued fall of manufactures and the growth of construction and services. The share of the tradable sectors in Chile was smaller in 2008 (27.4 per cent) than in 1973 (32.5 per cent). In Mexico, we may note a permanent decline in the share of agriculture, mining and manufactures, which accounted for 31 per cent of total GDP in 2009 (Table 3.4). Mexican manufactures explain the larger contribution of Mexican tradable sectors to GDP since 1960.

Trade-related sectors are not gaining weight in the structure of the economy of Chile and Mexico, despite gains in productivity; this may be attributed to the limited growth of production of tradable goods. By no means did the 2008 contribution to GDP of the Chilean and Mexican tradable sectors (agriculture, livestock and manufactures) correspond to the countries' level of development. In 2008, these sectors accounted for 27. 4 per cent of GDP in Chile, and for 31 per cent in Mexico. In Chile, the contraction of the agricultural sector stopped in 1973, but the recovery has not been high enough to reach the Chenery-Syrquin norm (Chenery and Syrquin, 1986). In Mexico, this tendency continues, although at a slower pace. Manufacturing has fallen to 15 and 22 per cent of the Chilean and Mexican GDPs, respectively. The elimination of the anti-export bias of the import substitution model has not increased the share of exportable sectors in total GDP (Table 3.4).

Table 3.4   Structure of GDP by sectors, 1960-2008 (in percentages)

Period	CHILE					MEXICO				
	Agric.	Mining	Manufac.	Construc.	Servic.	Agric.	Mining	Manufac.	Construc.	Servic.
1960-1970	5.4	8.0	19.8	8.9	57.9	13.4	2.9	21.5	5.6	56.6
1970-1980	5.0	8.0	19.6	6.5	60.9	9.7	2.7	22.5	6.1	58.9
1980-1990	5.7	9.0	17.2	6.5	61.6	8.1	3.7	21.2	5.5	61.6
1990-2000	5.8	7.0	16.9	7.3	63.0	7.2	3.3	23.4	4.9	61.2
2000-2008	5.2	7.0	17.1	6.8	63.9	6.4	3.0	23.8	4.6	62.2
2004	5.3	6.9	17.0	6.5	64.3	6.6	3.0	23.1	4.6	62.7
2005	5.6	7.4	15.8	6.8	64.4	6.2	2.9	23.2	4.6	63.1
2006	5.1	7.4	16.5	7.0	64.0	6.2	2.8	23.2	4.7	63.0
2007	4.9	7.3	16.3	7.0	64.5	6.1	2.7	23.0	4.7	63.4
2008	4.9	6.7	15.8	7.5	65.1	6.3	2.6	22.6	4.6	63.9

Source: Own elaboration based, for Mexico, on: Nacional Financiera: *La Economía Mexicana en cifras* (1978); INEGI: *Estadísticas históricas de México* (1999); INEGI: Sistema de Cuentas Nacionales y Presidencia de la República, Informe de Gobierno, over several years. For Chile: J. Braun, M. Braun and J. Diaz: *Estadísticas históricas*, Documento de trabajo No. 187, Instituto de Investigaciones Económicas, Universidad Católica de Chile (2000).

One of the reasons for the low growth of incomes and salaries registered in both countries is the "Dutch disease effect" - or the premature decline of tradable sectors, which afflicts all the economies rich in natural resources. This problem results from external shocks, caused by the volatility of external flows of either the financial resources, the remittances of workers abroad or the external prices of commodities. Based on the Chenery-Syrquin norm, we calculated that at Chile's and Mexico's actual per capita GDP, agriculture should contribute to between 12 and 15 per cent of total GDP. The manufacturing share would normally be close to 25 per cent. A strategy to raise sectoral productivity - and hence to improve job creation and salaries - might therefore be envisaged, which would involve increasing the contribution of manufactures and agriculture to GDP and employment.

The pattern of change of the structure of total employment by sectors confirms the decline of tradable sectors. From 1960 to 2008, employment in agriculture and livestock in Mexico fell from almost 46 per cent in 1960 to an average of 30.7 per cent throughout the 1970s. The decline continued up to 2008, when it accounted for 17 per cent of total employment. In mining, the reduction was from 1.3 per cent to 0.4 per cent, and employment in manufacturing shrank from 15 per cent to 9.6 per cent at the end of the period. In 2008, the services sector concentrated 58 per cent of all employment, while construction accounted for 15 per cent. In Chile, we see a similar trend and structure, with a lower participation of mining and agriculture, and a larger one in the remaining sectors. The decline in Mexican employment in agriculture was sharper than in Chile; nevertheless, Mexican productivity in this sector stagnated, as we discussed earlier. In Chile, the decline of employment in agriculture accelerated after the implementation of the trade agreement with the United States in 2004; a similar effect was registered in Mexico after 1994.

Table 3.5   Structure of employment by sectors, 1960-2008 (in percentages)

	CHILE					MEXICO				
	Agric.	Mining	Manuf.	Const.	Serv.	Agric.	Mining	Manuf.	Const.	Serv.
1960-70	24,8	3,2	17,3	7,9	46,8	45,5	1,3	15,0	4,2	33,9
1970-80	17,8	3,1	15,8	6,1	57,2	30,7	1,2	13,1	7,3	47,6
1980-90	17,6	2,1	14,5	5,4	60,3	26,6	1,0	11,8	9,1	51,5
1990-2000	16,0	1,8	16,0	7,6	58,6	22,0	0,5	12,1	10,9	54,5
2000-08	13,0	1,3	13,9	7,8	63,8	18,9	0,4	11,2	13,0	56,2
2005	12,6	1,3	13,3	8,0	64,8	17,9	0,5	10,7	15,3	56,7
2008	12,2	1,3	13,5	8.4	65.1	17,0	0,4	9,6	15,0	58,0

Source: Own elaboration based, for Mexico, on: Nacional Financiera: *La Economía Mexicana en cifras* (1978); INEGI: *Estadísticas históricas de México* (1999); INEGI: Sistema de Cuentas Nacionales y Presidencia de la República, Informe de Gobierno, over several years. For Chile: J. Braun, M. Braun and J. Diaz: *Estadísticas históricas*, Documento de trabajo No. 187, Instituto de Investigaciones Económicas, Universidad Católica de Chile (2000).

Overall, the trajectory of the structure of GDP and employment has not followed the path expected from the theory, and there has been no expansion of the high productivity tradable activities in GDP and employment. In Mexico and Chile, from 1981 to 2008, employment in tradable sectors declined from 40 per cent of total employment to 24 per cent and from 38.4 to 24 per cent, respectively. The sector that grew was employment in construction and services. Note should also be taken of the acceleration in the decline of agricultural and manufacturing employment after the reforms. In both countries, but especially in Chile, employment in services has the largest share in total employment and it is at least 20 points higher than the Chenery-Syrquin norm suggests.

The services sector has segments of high productivity, such as the banking system. Foreign banks fully own and control the Mexican and Chilean banks. Some important foreign investments have been made in domestic retail, but there is a very large segment of low productivity and low income, which absorbs the bulk of precarious employment. Neither Mexico nor Chile is an important exporter of services, as is the case of India, China and some Caribbean countries.

3.3.4 The growth of productivity of labour

In 1960, the Chilean productivity per worker was almost half that of Mexico's; by 2008, the difference had levelled out and Chilean productivity almost equalled the Mexican productivity per worker.

Figure 3.2 presents the evolution of productivity per worker in both countries and confirms the diverging path of the economies. This contrasting path, registered by Chile and Mexico, is repeated in all other main economic sectors.

In Mexico productivity in manufactures grew during the import substitution process; it decreased between 1981 and 1994 and recovered after 1995, only to fall again in the period 1999-2002. In 2008, productivity was still below 1981. Chile followed a different path. After a sharp decline from 1972 to 1975, productivity in manufactures experienced a volatile period (1975-1985), after which a sustained growth is evident. Nevertheless, Chilean productivity in manufactures remains smaller than that of Mexico's.

Figure 3.2   Labour productivity in Chile and Mexico, 1960-2008, in constant USD 2,000 per worker
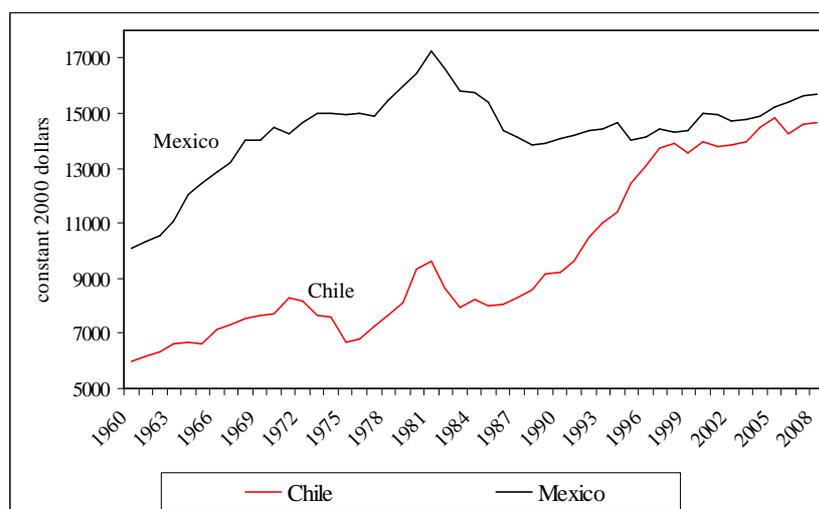
In both countries, productivity gains in manufactures resulted from the relative decline of the labour intensity of production and the relative stagnation of the share of the sector in GDP. In Chile, the drastic fall in manufactures reflects the preference given to the development of other exportable sectors such as forestry and fishing. Nevertheless, we can suggest that the growth pattern of the second most productive sector did not favour the creation of jobs in manufactures at a higher tempo that total employment (Figure 3.3).

Figure 3.3   Chile: Manufacturing sector: Productivity per worker and sectoral participation in total employment and total GDP, 1960-2008
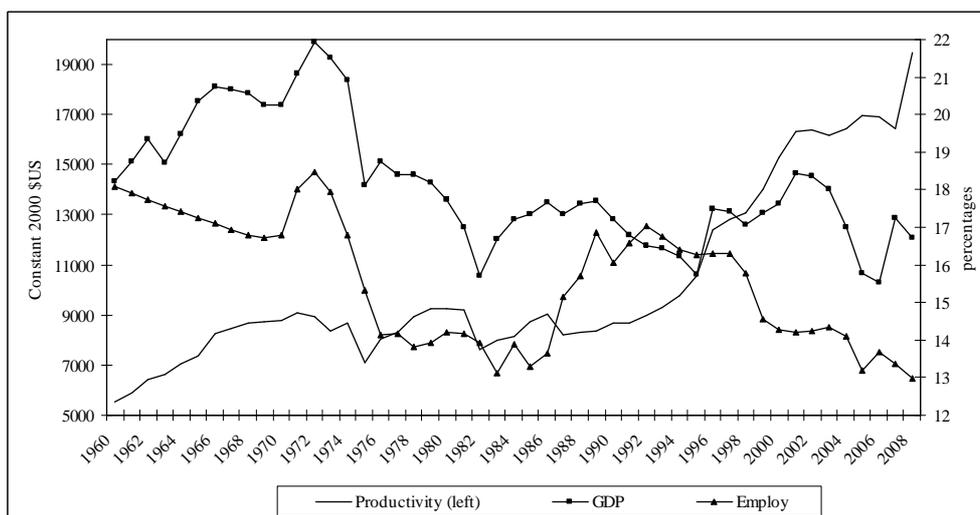
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In Mexico, both productivity and employment in manufactures grew together until 1970 (Figure 3.4). After that year, relative employment declined and productivity per worker increased.

Figure 3.4   Mexico: Manufactures sector: Productivity per worker and participation in total employment and total GDP, 1960-2008
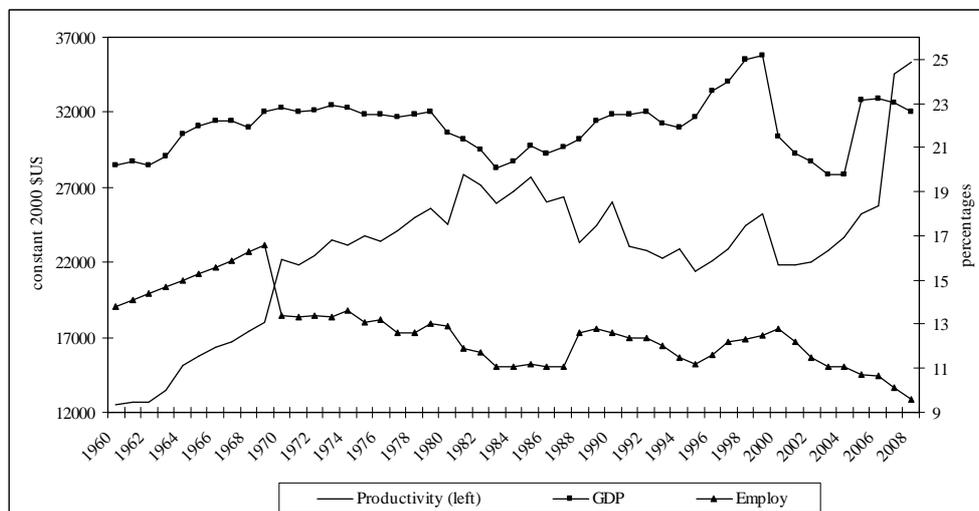
Source: Own elaboration based, on: Nacional Financiera: *La Economía Mexicana en cifras* (1978); INEGI: *Estadísticas históricas de México* (1999); INEGI: Sistema de Cuentas Nacionales y Presidencia de la República, Informe de Gobierno.

We can conclude that the relative share of manufactures in total GDP, in total employment and in productivity per worker increased after devaluations. The impact of the depreciation of the peso was to reduce the real costs of domestic factors of production and to increase the relative prices of imported goods - both intermediate and final consumption goods.

Productivity gains in agriculture, the most labour-intensive sector in both countries, emerged from a drastic cutback in participation in employment, while the sector's share in GDP has remained almost constant during the past 25 years (see Figures 3.5 and 3.6). This evidence contradicts Gutierrez et al. (2008) and Loayza et al. (2006), who suggest that the greatest growth and poverty alleviation effects occur when the fastest growing sectors are these with the highest labour intensity, especially agriculture. This is more the case for Chile than for Mexico, since the Chilean comparative advantage lies precisely in agriculture, fishing and forestry. Chile is a small, liberalized economy, a price-taker country that does not have to demand restrictions to enlarge the production in which it has a comparative advantage. Increasing the production of exportable goods with a comparative advantage, in order to supply world markets, could bring about both a rise in productivity and the creation of more jobs. The intensity of work would fall - and with it labour elasticity - but total employment would expand, as we shall see in the next chapter.

Figure 3.5   Chile: Agriculture: Productivity per worker and participation in total employment and total GDP, 1960-2008
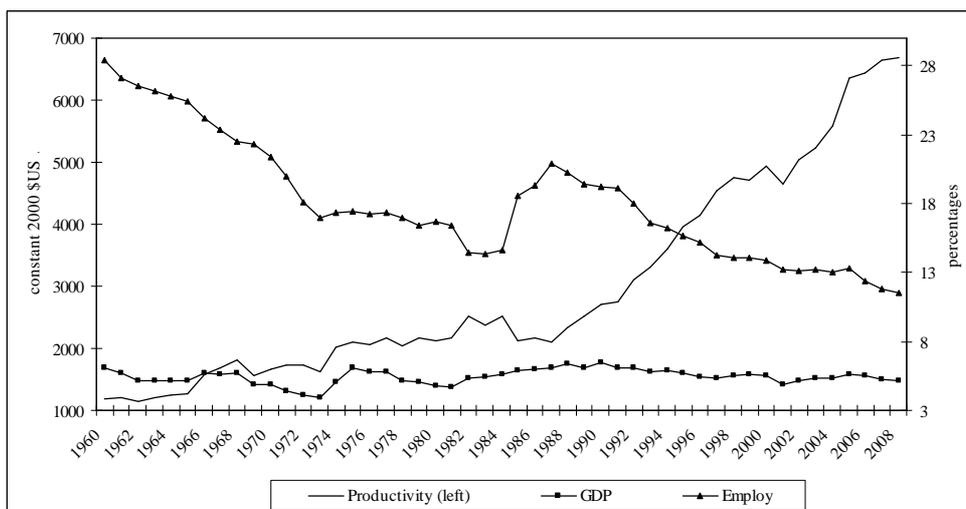
Chilean productivity in agriculture has performed far better than that of Mexico's, which has practically remained at the level registered in 1981. In 1960, Mexican productivity was twice as high as that of Chile's and these differences became even more marked up to 1970. By the time NAFTA had come into effect, in 1994, both levels of productivity were almost identical. In 2006 Chilean productivity was 44 per cent higher than in Mexico. A similar trend occurred in mining, construction and services.

According to Loayza et al. (op.cit. 2006), the growth model in the agricultural sector, up to 1982, did not benefit the poor. In Chile, employment in agriculture grew faster than total employment after 1982, when the government revised the exchange policy, eliminated the appreciation of the Chilean currency and revised the tariff structure - giving more protection to some agricultural processed goods. New labour and social security reforms were introduced, which somehow stimulated job creation in the sector. After 1999, the relative decline of labour reappeared. In Mexico, we can observe the same process, which started in the 1950s and has not stopped since then, although it decelerated after the devaluations. Mexican agriculture faces strong competition, even with its most significant export products. Mexico competes with the United States over many goods that are central to Mexican production, such as beans, corn, soybeans, wheat, tomatoes, and a wide range of fruits and vegetables. Given the intensive integration with United States, the Mexican agricultural producers have less scope to increase production, unless changes are made to the US Farm Policy.

Figure 3.6   Mexico: Agriculture: Productivity per worker and participation in total employment and in total GDP, 1960-2008
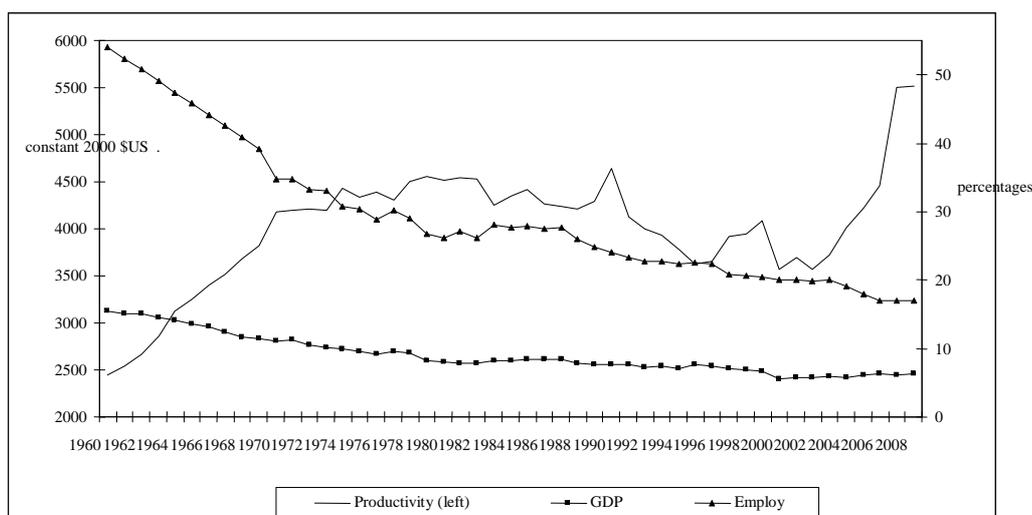

Source: Own elaboration based on: Nacional Financiera: *La Economía Mexicana en cifras* (1978); INEGI: *Estadísticas históricas de México* (1999); INEGI: Sistema de Cuentas Nacionales y Presidencia de la República, Informe de Gobierno.

3.4   The evolution of some macroeconomic fundamental variables

The highest achievement of the reforms is, according to some authors, the stabilization of the economy via the contraction of inflation, fiscal deficit and public debt (Table 3.6). Both countries have cut inflation to a one-digit figure and converged to the rate of inflation prevailing in the United States and other developed countries. The way to control inflation was mainly the overvaluation of the national currencies. Chilean inflation, for the entire period (1980-2008) has been lower, and the price index registered for the period 2000-2007 was half that of Mexico. Keeping the national currency overvalued as a stabilization instrument affects investments and impairs the growth of the more labour-intensive activities, primarily agriculture (Montiel and Serven, 2006; Puyana and Romero, 2007).

Table 3.6   Chile and Mexico: The evolution of some macroeconomic variables

	80-07	80-85	85-90	90-95	95-00	00-07
Chile						
Real effective exchange rate index (2000 = 100)	103.26	147.10	87.08	88.97	102.23	92.01
Consumer price index (2000 = 100)	12.71	23.56	21.28	15.94	5.67	3.08
Public and publicly guaranteed debt service (% of GNI)	3.89	5.87	7.09	3.88	2.37	1.67
Public and publicly guaranteed debt service (% of exports)	12.77	23.41	20.33	12.47	8.01	4.06
Mexico						
Real effective exchange rate index (1990 = 100)	85.38	78.81	107.26	90.75	89.48	71.38
Consumer price index (2000 = 100)	34.28	56.38	72.77	19.42	22.00	8.16
Public and publicly guaranteed debt service (% of GNI)	4.62	5.77	5.45	3.60	5.52	3.30
Public and publicly guaranteed debt service (% of exports)	19.97	31.83	24.46	17.79	16.53	11.42

Source: Own elaboration based on World Bank: *World Development Indicators 2009*.

As economies stabilize, better conditions for investment and savings tend to emerge and real wages improve alongside. Nevertheless, the effects of stabilization depend on the instruments used to achieve it. In both countries, it is clear that a revaluation of the national currencies took place. The intensity of the revaluation was different, as was the timing. The Mexican real exchange rate index (1990=100) appreciated by 13.5 per cent over the period.

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From 2000 to 2007, the appreciation of the Mexican peso (around 30 per cent) was higher than in 1994 when the last crisis exploded (Table 3.6). The appreciation of the Chilean peso was less acute.

Thus, the impact of reducing inflation by appreciating the currency could delete the benefits to the poor of eliminating the inflation tax. Perry et al. (2006) state that they did not find negative effects from mild inflation on the incomes of the poor in Latin America. The poor may have lost more from the loss of employment than they gained from price stability. Chile managed to have higher rates of growth and lower inflation, which was not the case in Mexico - which had lower growth and relatively higher inflation trends.

Table 3.7   Chile and Mexico: The evolution of some macroeconomic variables

	80 - 08	80 - 85	85 - 90	90 - 95	95 - 00	00 - 08
Chile						
Final consumption expenditure, etc. (% of GDP)	75,48	86,11	74,17	73,13	74,97	70,94
General government final consumption expenditure (% of GDP)	11,62	13,83	11,28	10,21	11,47	11,37
Gross domestic savings (% of GDP)	24,51	13,89	25,83	26,87	25,03	29,06
Gross national expenditure (% of GDP)	97,19	102,06	96,07	98,07	100,12	92,30
Gross fixed capital formation (% of GDP)	20,57	15,12	20,29	23,81	24,39	20,14
Gross savings (% of GDP)	18,55	6,14	17,74	23,00	22,43	22,12
Mexico						
Final consumption expenditure, etc. (% of GDP)	77,59	73,01	76,18	80,42	76,69	79,93
General government final consumption expenditure (% of GDP)	10,36	9,76	8,70	10,06	10,42	11,78
Gross domestic savings (% of GDP)	22,41	26,99	23,82	19,58	23,31	20,06
Gross national expenditure (% of GDP)	99,83	96,22	97,45	102,52	100,19	101,79
Gross fixed capital formation (% of GDP)	19,70	21,45	18,44	18,35	19,48	19,95
Gross savings (% of GDP)	20,32	22,48	20,67	17,48	21,24	20,02

Source: Own elaboration based on World Bank: *World Development Indicators 2009;* ECLAC, economic and statistics indicators, consulted at: http: //websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=6&id Tema=146&idioma=.

Despite the similarities between Chile and Mexico illustrated in Table 3.7, there are important differences in the share of final consumption as percentage of GDP, and the rather low proportion of savings. In the period 2000-08, Mexico's final consumption reached 80 per cent, while Chile's was 71 per cent, which left a narrow margin for savings and investments (Montiel and Serven, 2006). Mexico's gross national expenditure exceeded 100 per cent of GDP. The causes are manifold. The oil rent allowed the Government to have relatively high expenditure and, at the same time, low rates of taxation, which left relatively large disposable income and remittances. On average, for the last 18 years (1990-08), total tax revenue in Chile represented 17 per cent of GDP, while in Mexico it only accounted for 11 per cent. When oil rents are included, Mexican fiscal income jumped to 16 per cent of GDP - and to 19 per cent of Chilean GDP when adding copper revenue.

Gross fixed capital formation (GFCF) as a percentage of GPD is below the level for developing countries (Isham et al.,1999). According to these authors, for a country at the level of development of Chile and Mexico, GFCF has to represent at least 24 per cent of GDP (and public investments no less than 50 per cent of that) in order to maintain robust growth and be competitive. Public investments are needed in sectors that are not attractive to private investors on account of high risk or low rates of return. Chile and Mexico both registered GFCF of 20 per cent of GDP. Mexico had its record level of GFCF in 1981 (around 26.5 per cent of GDP), after a period of sustained growth since 1973. In Chile, the peak was registered in 1996-97 (around 27.0 per cent of GDP). The decline in the total investments rate, from these record levels, followed the trajectory of investments per worker, which may in turn explain the differences encountered in total and sectoral productivity growth (see Figure 3.7). Chile overtook Mexico in 1994.

 In 2008, the investment per worker in Mexico represented around 80 per cent of the figure registered in 1980; this contrasts amazingly with Chile, which increased its investments per

worker by 57 per cent from 1980 to 2008. The GFCF is the most important variable explaining the GDP growth of the two countries; attention must therefore be paid to both the levels and trends of investments. After revising the general macroeconomic and sectoral trends of Chile and Mexico, we shall present the results of two models constructed to identify the variables that explain GDP and employment growth in each country.

Figure 3.7   Gross Fixed Capital Formation per worker. In constant USD 2,000 Dollars, 1980-2008
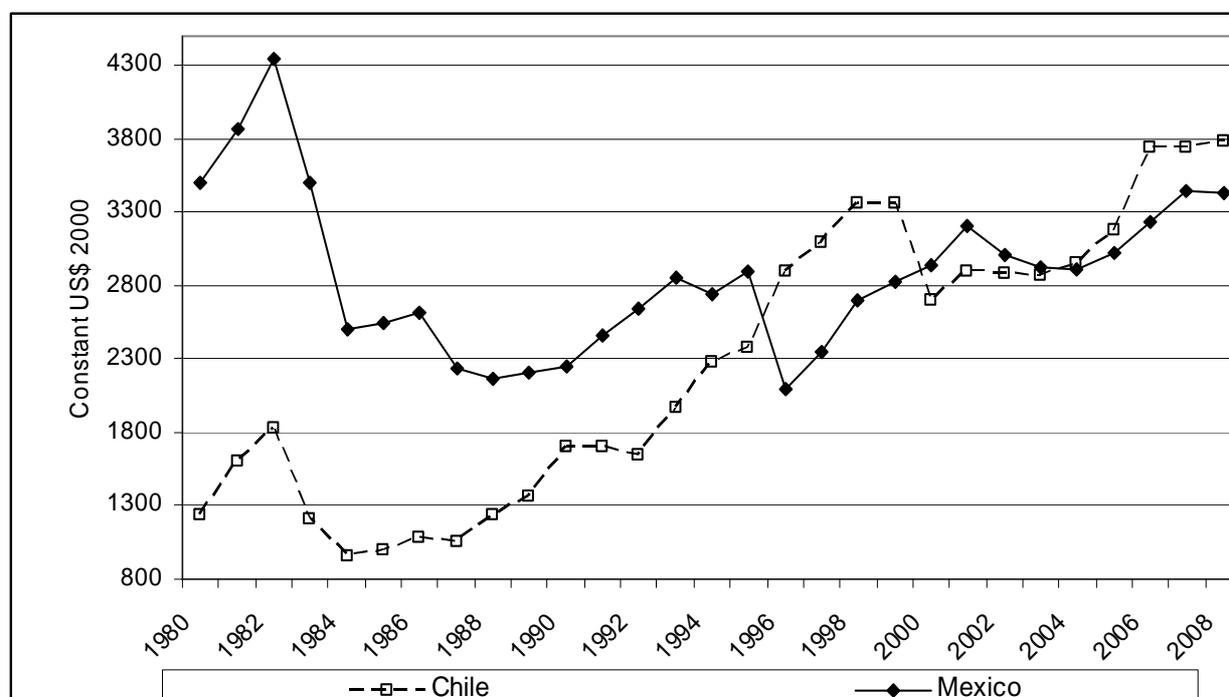
Source: Own elaboration based on ECLAC: *Historical series of economic statistics*, 1950 – 2008.

4.   The pattern of economic growth and the nexus with employment

4.1   Some introductory comments

One of the most important links - perhaps the most important - between GDP growth and poverty is employment, and the employment elasticity of GDP provides the way to visualize the strength and direction of this link. Elasticity relates the growth of employment to GDP growth. With greater elasticity, the capacity of the economy to generate employment increases and the possibilities of reducing poverty improve. The value of the elasticity depends on the level of development of each country. This and the allocation of the factors of production constitute another parameter for measuring elasticity.

The labour elasticity of GDP guages the changes in the employment level and not changes in the rate of occupation; it does not take into consideration unemployment or the rate of participation, and much less the labour reserve hidden under precarious employment, underemployment and informal activities (Osmani, 2003; Gutierrez et al., 2008; Sundaram et al., 2002). If one economy grows at the rate of 10 per cent and another at 1 per cent, but they have the same GDP labour intensity, both would be considered "equivalent", despite the fact that the economy growing at 10 per cent generates more employment (Gutierrez et al., 2008).

Chile and Mexico have relatively low unemployment and high underemployment, a large supply of labour, low incomes and a lack of unemployment insurance[11]; in order for growth to bring down poverty rates, labour demand must therefore reduce hidden unemployment, underemployment and informality. If these conditions were met, there would be no changes in the employment rate but the labour force would move towards more productive and better-paid activities. Such a strategy implies, on the one hand, that the growth of employment must surpass that of the economy and, on the other, that there is an increase in permanent productivity to sustain long-term growth. Employment elasticity of GDP is a proxy of the labour intensity[12] and its trajectory allows a detection of the periods where growth integrates higher increases of labour – i.e. whether it is more or less labour-intensive. Employment elasticity of GDP reflects the inverse of labour productivity. An elasticity higher than unity implies a decline in productivity and an elasticity lower than unity means that employment expansion is taking place along with an increase in productivity (Islam, 2004). Productivity growth implies a reduction of labour elasticity and intensity, if the product is constant or grows less than productivity.

For these reasons, the promotion of intensive labour growth should not be the only purpose of a poverty reduction policy, since that would imply the fall of productivity and diminishing income (Islam, 2004). This is especially important for small, open economies engaged in international competition, which present low productivity and ample labour reserves. These economies should attempt, in the first place, to widen elasticity and labour intensity and, secondly, to increase productivity. Total labour elasticity depends on the elasticity of the different economic activities and their total weight in GDP and employment. Therefore, a sound growth strategy would combine productivity increases in activities of greater elasticity and in those with higher labour intensity of the product, provided that the increases in productivity are reflected in a larger volume of the product and employment (Islam, 2004; Khan 2005). This strategy may lead to a type of growth with increased total elasticity, even if in some sectors it may decline. Any policy for raising the productivity of the total economy should start by increasing it in activities with a higher employment component (Ul Haque, et al. 1995, Osmani 2003; Khan, A.R. 2005; Gutierrez, et al., 2008; Loayza et al, 2006). Concentrating only on nurturing the growth of the more labour-intensive and less productive sectors could increase the employment elasticity of GDP at lower growth rates of the economy. This strategy, however, may imply a higher absorption of employment and lower income per head and per worker (Islam, 2004).

The shift of labour to higher productivity activities makes us consider whether poor workers – and those involved in low productivity and low-income activities – have the capacity to become part of the expanding higher productivity sectors. And here we touch upon the widening of the volume and quality of labour, which Osmani calls the *integration factor* (Osmani, 2002). There are three considerations: whether the activities with higher productivity are experiencing an expansion in production and employment; whether these changes are reflected in better real average wages and in higher income for the self-employed; and whether the proportion of the population engaged in low productivity activities is decreasing and their incomes are improving. This would lead to a larger participation of labour in total income and to the reduction of income concentration and

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[11] The government of Mexico City introduced a temporary unemployment subsidy, equivalent to one minimum wage, payable,during six months only, and exclusively to the unemployed that had previously been formal workers.

[12] Work intensity of GDP is defined as the employment proportion involved in GDP.

consumption. To integrate the poor into higher productivity and high-growth activities is a challenge and requires long-term investments in human capital. New entrants to the labour market, with higher degrees of education than their parents, can and should engage in higher productivity and better-paid activities than their predecessors. This will induce changes in the occupational structure of the labour force. Changes also come from training programmes and active labour schemes, which allow the transference of workers. But the main strategy is to generate constant increases in the volume of the product, pari-passu with the increases in productivity.

4.2 Labour intensity of Chilean and Mexican GDP growth

Table 4.1 shows the figures for the growth of GDP, employment and the economically active population (EAP), which are a basis for calculating the employment elasticity of GDP. The periods of time included in the table are those during which the most important economic and political events occurred in each country. In the case of Chile, these events include the return to democracy in the early 1990s; and the crisis, in 1981, of the rigid liberal model installed in the early 1970s and the modification of some of its elements. For Mexico, the relevant episodes are the debt crisis in 1980 and the implementation of NAFTA.

In Mexico, labour elasticity was above unity during the 1980-96 period, and employment rose above GDP. This dynamic was broken from 1996 to 2008, when elasticity fell below unity and the Mexican economy became less labour-intensive. Chilean labour elasticity has remained below one and has registered slow increases.

Table 4.1   Growth rates of GDP, employment and the employment elasticity of the product. Hypothetical GDP growth required to absorb the increase, in the economically active population, 1980-2009

Variable	Chile			Mexico		
	1980-1991	1991-2008	1980-2008	1980-1993	1993-2008	1980-2008
GDP (annual growth %)	4.63	5.45	5.02	2.70	2.91	2.84
Employment (annual growth %)	3.07	2.73	2.85	3.39	2.29	2.85
Elasticity	0.66	0.50	0.57	1.26	0.79	1.00
EAP (annual growth %)*	2.78	1.70	2.12	3.77	2.28	2.91
Popul between 15-65 years**	2.10	1.69	1.86	2.70	2.91	2.84
GDP hipotet. (Annual growth %)	4.20	3.39	3.75	3.00	2.89	2.90
Observ GDP/Hypothetical GDP***	1.10	1.61	1.34	0.90	1.01	0.98

Source: A. Madisson, at: http://www.conference-board.org/economics/downloads/TED07II.xls, consulted September 2009, and World Bank: World Development Indicators 2008. Own calculation. * Observed growth. ** The growth rate of GDP needed to absorb all the growth of the EAP at the observed labour elasticity GDP. ***Hypothetical growth of GDP to absorb the increments of population between 15 and 65 years old.

As the last line in Table 4.1 indicates, the observed GDP growth in Chile since 1980 is larger than the growth needed to absorb the increments of the labour force maintaining the actual quo of the labour market, which is by no means ideal. In Mexico, during the entire period, GDP growth was lower than that required to absorb the increases in the labour force. In both countries, the improvement of labour conditions requires a greater expansion of the economy.

Figures 4.1 and 4.2 illustrate the relations between GDP growth, employment growth and the economically active population, which registered important decreases resulting from lower demographic growth. In Chile, the fast growth of both GDP and employment surpassed the increments of the economically active population, suggesting higher

participation rates. These dynamics changed in the period 1991-95 - and by 1996-2000, employment and the economically active population were in equilibrium (Figure 4.1).

Figure 4.1   Chile: Annual average growth rates of GDP, employment and the economically active population (EAP), 1981-2008
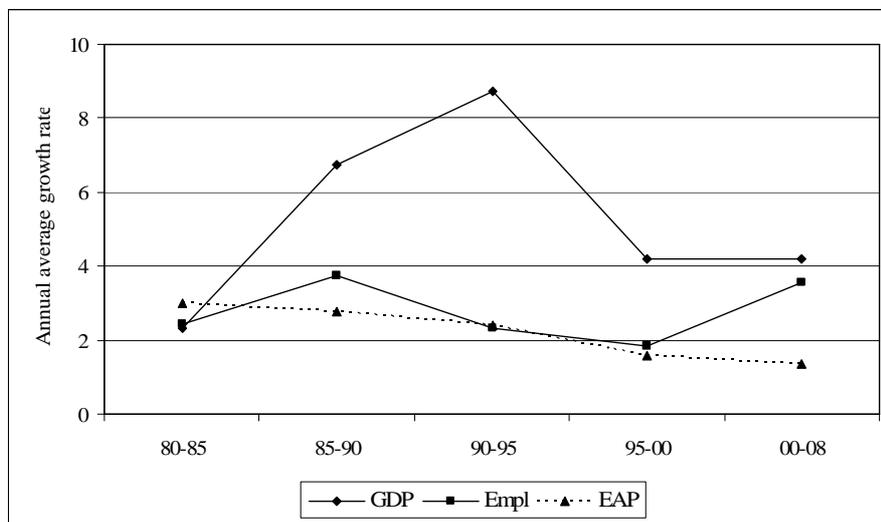
Source: Own elaboration on the basis of data from the World Bank: *World Development Indicators*; The Conference Board, and ECLAC.

The balance between the economically active population (EAP) and employment is important, but it ignores the rate of unemployment and informal employment. In Chile unemployment remains at around 8 per cent of the economically active population; furthermore, the rate of participation has decreased and 22 per cent of workers are attached to the informal sector, as we shall see later in the text.

Mexico shows lower GDP growth, with changing dynamics: during the 1980-95 period, there was a trajectory of low and stable rates of GDP growth and a higher expansion of employment, which slowed down in 1995. During the 1996-2000 period, GDP grew more than employment and this rose above EAP, suggesting higher participation. The period 2000-08 shows a decline in economic activity and in the labour intensity of GDP, reflecting the replacement of labour by capital, mentioned above (Figure 4.2).

Figure 4.2   Mexico: Annual average growth rates of GDP, employment and the economically active population (EAP), 1985-2008
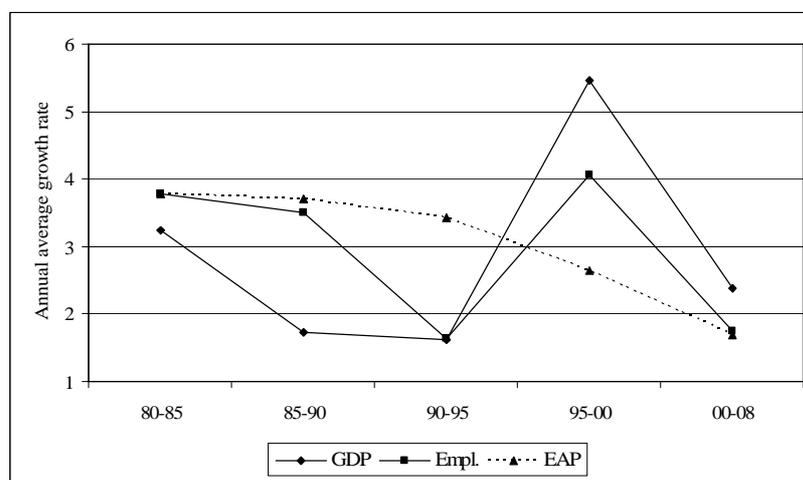
Source: Own elaboration on the basis of data from the World Bank: *World Development Indicators 2009;* The Conference Board; and ECLAC.

4.3 The sectoral pattern of economic growth and sectoral labour elasticity

For the movement of factors of production to bring about gains in productivity and in labour elasticity, there should first be a higher growth in those sectors with a higher labour intensity, which in addition should show productivity increases. There should also be a factor shift from the sectors of lower productivity to those of higher productivity, which should absorb labour while increasing productivity and expanding total production. The strongest effects of growth on poverty alleviation occur when the fastest growing sectors are these with the highest labour intensity, especially agriculture, which have to expand production and productivity (Gutierrez et al.,2008). If higher growth activities and those that stimulate the expansion of the economy are highly intensive in capital and less intensive in the use of labour, the effect of growth on poverty is bound to be limited. If, on the contrary, the faster growing sectors are the ones with greater employment intensity, the effects on poverty may be positive but minor. Therefore, increases in the volume of production should replicate productivity increases. After all, enlarging the market for national production is one of the central purposes of economic liberalization.

In Mexico and Chile the poor work. There is no question of unemployment for the poor or the extreme poor. If the poor move to higher activities or if the new entrants to the labour force integrate in higher productivity jobs, the structure of employment will change in a positive way. Labour-intensive growth is feasible in developing countries with large labour force reserves and sectors characterized by economic dualism. This situation cannot occur in situations of full employment, where growth has to be capital-intensive. Fast labour-intensive growth will increase demand for labour and result in higher wages, requiring that work moves from the sectors of greater labour intensity, agriculture and services, to those of greater product growth and higher productivity. In the following sections, we shall analyse the labour elasticity of GDP in order to comprehend the direction of the nexus of growth in production and employment growth and the impact on productivity. Tables 4.2 and 4.3 show the functioning of the nexus.

In Chile, as Table 4.2 illustrates, agriculture is the sector with the highest labour intensity, low and falling labour elasticity and the lowest productivity. The growth of the sector recovered after 1973 but at a lower pace than total GDP or the growth in services and construction. Productivity growth started in 1990 and may be attributed to the drop in employment - and recently to the increases in international prices. Contrary to expectations (Osmani, 2003, p.13, Gutierrez et al., 2008), the evolution of Chilean agricultural employment does not confirm that globalization increases employment in intensive labour activities with a comparative advantage, which constitute the international specialization of the country.

Table 4.2   Chile: Changes in the structure of production, productivity and employment intensity of GDP. Annual average rates of growth in percentages, 1961- 2006

Sector	Variable	61 - 06	61 - 73	73 - 82	82 - 91	91 - 06
	▲% total GDP	4.41	3.44	1.70	4.27	5.77
	▲% total Prdvty	2.18	1.99	0.87	0.15	3.31
Agriculture	▲% employment	0.43	-2.44	0.34	4.99	-0.96
	Labour Productvy	2807	1476	2098	2412	4567
	▲% PV	4.04	2.84	4.23	2.82	5.68
	▲% GDP	4.28	0.29	4.53	7.10++	4.64
	Empl. Elast.	0.286•	-8.272	0.074	0.704	-0.206
	Empl share (%)	18.29	23.43	16.72	18.01	14.66
	GDP share (%)	5.46	5.13	5.18	5.96	5.56
	Labour intensity (%)	**0.045**	**0.070**	**0.050**	**0.043**	**0.024**
Mining	▲% employment	0.19	0.99	-2.59	2.60	-1.08
	Labour Productvy	32633**	16056**	21008**	32679**	53626**
	▲% PV	4.85+	1.41	9.55+	4.41+	7.16+
	▲% GDP	4.42	2.14	5.56++	5.41	5.54
	Empl. Elast.	-0.087•	0.460	-0.466	0.480	-0.196
	Empl share (%)	2.38	3.23	2.86	2.04	1.57
	GDP share (%)	7.89	7.78	8.45	9.22	6.91
	Labour intensity (%)	0.004	0.006	0.005	0.003	0.002
Manufacts	▲% employment	1.47	1.45	-0.26	4.68	0.59
	Labour Productvy	9912	7722	8469	8370	13376
	▲% PV	2.66	3.34+	-1.11	-0.28	4.36
	▲% GDP	4.13	4.82++	-1.31	4.28	4.94
	Empl. Elast.	0.311*	0.301	0.199	1.093	0.119
	Empl share (%)	15.67	17.48	14.84	14.81	15.23
	GDP share (%)	18.21	20.13	18.47	17.13	16.99
	Labour intensity (%)	0.011	0.013	0.012	0.012	0.008
Construc.	▲% employment	2.92	1.87	-2.28	5.28*	3.76*
	Labour Productvy	8768	7094	7899	8624	10673
	▲% PV	1.86	-0.15	5.49	-0.47	1.79
	GDP share (%)	4.41	1.31	2.82	4.05	5.39
	Empl. Elast.	0.494••	1.431•	-0.808	1.306•	0.696•
	Empl share (%)	6.92	7.95	5.39	5.50	7.77
	GDP (%)	7.23	8.50	6.20	6.47	7.09
	Labour intensity (%)	0.012	0.014	0.013	0.012	0.010
Services	▲% employment	3.03*	3.42*	4.91*	1.94	2.64
	Labour Productvy	9164	8117	6989	7510	12253
	▲% PV	1.63	0.44	-2.50	2.30	3.27
	▲% GDP	4.59++	3.82	2.08	4.02	5.95++
	Empl. Elast.	-0.216•	0.894	2.359•	0.484	0.443
	Empl share (%)	56.74#	47.92#	60.19#	59.64#	60.76#
	GDP share (%)	61.22##	58.46##	61.70##	61.22##	63.45##
	Labour intensity (%)	0.012	0.012	0.014	0.014	0.009

• Elasticities calculated with ordinary least squares method. Data were changed to natural logaritmus and were differentiaded to prevent spourious regressions.

*	Fastest employment growth	◆	Highest labour elasticity
**	Higher productivity in constant US$ 2000	#	Largest share in sectoral employment
+	Fastest productivity growth	##	Largest share in sectoral GDP
++	Fastest production growth		

Source: Own estimations based on A Madisson at: http://www.conference-board.org/economics/downloads/TED07II.xls., and World Bank: *World Development Indicators 2007*.

Chilean agriculture demonstrates an increase in productivity, a decline in labour elasticity and a reduction in job creation during the periods 1961-82 and 1991-2006. If there had been a greater expansion of production, sectoral employment and salaries might have increased. As Chile's comparative advantage lies, besides mining, in agriculture, the agricultural sector should normally expand faster pari-passu with productivity and employment since it is directed to satisfy world demand. The sector with the greatest participation in GDP and employment is services, which holds the fourth lowest productivity rate and the second highest labour intensity. Services and construction have the highest employment elasticity of GDP and the highest employment growth. We can suggest that the expansion of the services and construction sectors might have some positive impact on poverty reduction.

The leader in productivity is mining, which presents the highest and fastest growing productivity accompanied by the lowest absorption of employment, as well as the lowest employment elasticity and labour intensity of income. The very character of the mining sector, with its extremely high capital intensity, prevents major job creation - not least in direct production. The expansion of the mining sector affects the economy mainly through the increase of fiscal income and public expenditure, which tend to be intensive in non-tradable goods. The second higher labour productivity is in manufactures, which registered the fastest growth during the period 1961-73. Productivity gains are reflected in falling job creation. Chile does not provide any special treatment to stimulate manufactures, as

indicated by the tariffs structure. That may have a detrimental effect on economic expansion since, according to Kaldor's Laws, manufactures is the sector with the highest potential for productivity growth and the strongest multiplying effects on total GDP.

The movement of the Chilean labour force has opted for the path to improve the quality of labour and increase labour incomes. Labour moved first from agriculture (the activity with the lowest productivity and the highest labour intensity) towards services, which has the highest share of employment and higher productivity and labour elasticity than agriculture, and then afterwards towards construction. These two sectors do not have the high productivity growth of manufactures. In order to induce largest improvements in the quality of work and in total productivity, manufactures, which constitute the sector with the second highest labour productivity, should absorb a larger share of the labour expelled from agriculture. We consider, nevertheless, that agriculture has room to increase its share in GDP while improving productivity. That would make it possible to retain labour without reducing labour incomes.

Mexico presents a somewhat different panorama (Table 4.3). As in Chile, the mining sector has the highest productivity and capital intensity and a limited labour elasticity and intensity, despite the work overload that usually characterizes state-owned enterprises[13] Mining has not been the sector of highest growth, except during the period 1979-85 when production, productivity and employment increased due to the discovery of the giant oil field Cantarell.

Agriculture has the lowest productivity and productivity growth, the second largest share of total employment, the highest labour intensity of the economy, and low and falling labour elasticity. A most severe fall in agricultural employment took place during the period 1996-2006, which brought about the contraction of the share in total employment and in sectoral GDP with no important increases in productivity. This sectoral evolution has not been positive in terms of improving the income of the rural population.

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[13] According to Cole et al; (2004), the Chilean copper industry is different from other Latin American extracting activities, precisely because it introduced national and international competition and has important profits in productivity.

Table 4.3   Mexico. Changes in the structure of production, productivity and employment intensity of GDP. Annual average rates of growth in percentages, 1961- 2006

Sector	Variable	61 - 06	61 - 80	80 - 96	96 - 06
	▲% total GDP	4.40	6.73	2.42	3.64
	▲% total Prdvty	0.98	2.48	-0.67	0.95
Agriculture	▲% employment	0.78	0.23	3.14	-1.22
	Labour Productvy	3939	3768	4197	3894
	▲% PV	1.42	3.16	-1.20	2.05
	▲% GDP	2.04	3.33	1.78	0.54
	Empl. Elast.	0.363▪	0.068	1.761	-2.259
	Empl share (%)	29.84	38.28	25.22	19.84
	GDP share (%)	9.12	11.59	7.84	6.13
	Labour intensity (%)	**0.026**	**0.027**	**0.024**	**0.026**
Mining	▲% employment	1.26	3.98	-0.90	-0.43
	Labour Productvy	46786**	27410**	63398	62643**
	▲% PV	2.90+	4.16+	7.76+	-1.74
	▲% GDP	3.19	8.53++	4.43++	-2.98
	Empl. Elast.	0.117▪	0.466	-0.203	0.145
	Empl share (%)	0.93	1.26	0.85	0.41
	GDP share (%)	2.89	2.84	3.59	2.06
	Labour intensity (%)	0.003	0.004	0.002	0.002
Manufacts	▲% employment	2.80	3.62	3.62	0.95
	Labour Productvy	22177	19546	24745	23449
	▲% PV	1.77	3.57	-0.64	1.85
	▲% GDP	4.41	7.14	2.73	2.69
	Empl. Elast.	0.244▪	0.507	1.328	0.354
	Empl share (%)	12.80	14.10	11.84	11.70
	GDP share (%)	21.79	22.00	21.68	21.75
	Labour intensity (%)	0.005	0.005	0.004	0.004
Construc.	▲% employment	7.05*	9.26*	6.03*	6.08*
	Labour Productvy	9369	13134	7692	4430
	▲% PV	-2.22	-0.45	-4.48	-2.32
	▲% GDP	4.22	7.94	1.25	3.18
	Empl. Elast.	0.575▪*	1.166♦	4.829♦	1.914♦
	Empl share (%)	8.52	5.75	9.49	12.54
	GDP share (%)	5.33	5.86	5.33	4.37
	Labour intensity (%)	0.013	0.008	0.014	0.023
Services	▲% employment	5.03	7.22	4.79	1.59
	Labour Productvy	16518	17640	15907	14978
	▲% PV	0.07	0.03	-2.01	3.40+
	▲% GDP	4.93++	7.11	2.49	4.91++
	Empl. Elast.	0.173▪	1.015	1.926	0.323
	Empl share (%)	47.95#	40.61#	52.62#	55.64#
	GDP share (%)	60.90##	57.77##	61.60##	65.70##
	Labour intensity (%)	0.006	0.006	0.006	0.007

▪ Elasticities calculated with ordinary least squares method. Data were changed to natural
logaritmus and were differentiaded to prevent spurious regressions.

*	Fastest employment growth	♦	Highest labour elasticity
**	Higher productivity in constant US$ 2000	#	Largest share in sectoral employment
+	Fastest productivity growth	##	Largest share in sectoral GDP
++	Fastest production growth		

Source: Own estimations based on A Madisson, at: http://www.conference-board.org/economics/downloads/TED07II.xls, and World Bank: *World Development Indicators 2007.*

Several factors have contributed towards maintaining the relatively elevated agricultural labour intensity: first, the peasant population and poor small landowners consider land an insurance for the future and are reluctant to sell it; second, focalized poverty and cash payments to agricultural producers complement income and increase the relative price of the land; and finally, remittances constitute an important source of income for poor peasants.

Construction has the second highest labour intensity and the lowest productivity after agriculture and registers the fastest increases in employment. The impact of job creation in construction upon the dynamics of the labour market is not highly significant due to its relatively low share in total employment, but it may have positive effects in view of its high labour intensity, (Loayza at al., 2006; Gutierrez et al., 2008). Construction has large employment elasticity and intensity - both showing a growth tendency - which translates into an almost constant fall in productivity. Therefore, the effect on poverty may be at least minor. Construction is distancing itself from the services sector, which tends to demand workers with higher qualifications than those coming from agriculture and rural activities.

The services sector concentrates the largest shares of GDP and employment. In the period 1996-06, it registered the fastest growth of GDP and productivity and a low job creation rate. The large productivity growth rates may be attributed, among other things, to the privatization of the nationalized banks in the early 1990s, which resulted in a considerable reduction of personnel, the entrance of foreign banks into the Mexican banking system and foreign investments in domestic retailing. The modernization of the banks accelerated the decline of labour intensity by introducing computerized technology and eliminating hundreds of branches throughout the country. A similar trend has occurred with the entrance of the large international commercial chains into the retail market. Dualism in retail trade has become more acute and small stores are closing down at a fast rate. Machines are replacing labour in all sorts of activities, such as coffee servers in offices, ticket collectors in car parks and cinemas, and so on. This analysis is also valid for Chile. In the services sector, technology is replacing less qualified labour.

Generally speaking, in Mexico, labour has moved first from agriculture, the sector with the lowest productivity, to construction, the sector with the second lowest productivity; and, second towards the services, which has the largest - and increasing - participation in employment, and the third lowest productivity. Manufactures have lost relative employment and absorbed very little of the labour shifted from agriculture.

Given the weight of manufactures in total exports (85 per cent), we can assume that Mexico has a comparative advantage in this sector. It was to be expected that it would stand out for its high rates of growth of production and productivity and become the motor for growth. This does not seem to be the case, as illustrated by Figure 4.4. In the first place, manufactures have grown less than total GDP. Only in the period 1961-8 did the sector rate of change surpass total GDP growth and register the fastest increases in employment. Since then, its weight in GDP had come to a standstill at around 22 per cent. Furthermore, although labour elasticity and intensity are declining, employment, in absolute terms, has been generated, but at lower speed than total job creation. The reduction in the contribution of manufactures to 9.6 per cent of total employment is less intensive than the drop in total value added, which suggests that manufactures are losing productivity in relative terms. The weight of subcontracting (maquila) and of similar programmes for the temporary imports for assembly and re-exportation purposes can explain these paradoxical developments. Subcontracting activities concentrate 80 per cent of manufacturing exports, 32 per cent of total employment but only close to 8 per cent of total sectoral production (Puyana and Romero, 2009). The aggregated value provided by these activities accounts for 3 per cent of GDP and the weight of manufactures in total exports does not appear reflected in its contribution to GDP or employment.

Figure 4.4   **Contribution of the Mexican manufacturing sector to total GDP, total employment and exports, 1960-2007**
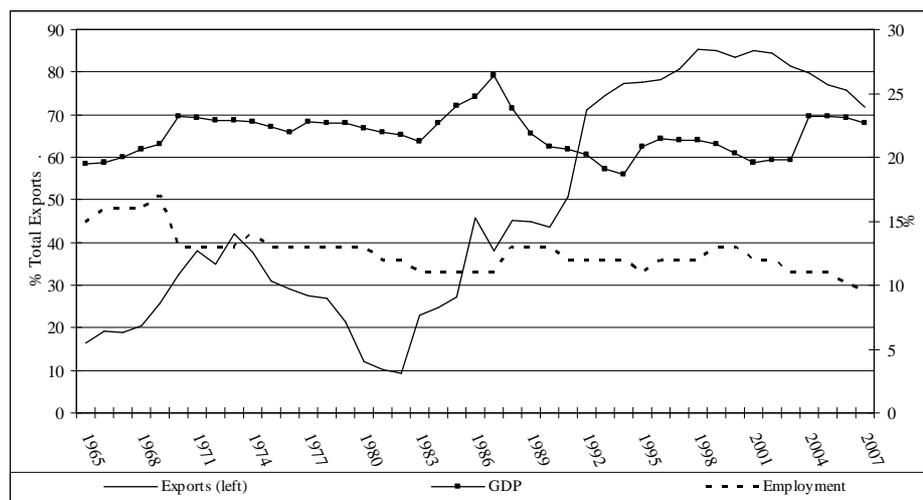
Source: Based on Puyana y Romero (2009), Chapter III.

4.4   The pattern of growth of the manufacturing sector and the changes in sectoral labour elasticity

We have assessed the changes in the volume of production, employment and productivity that took place during the period 1982-2000 in the five major economic divisions of GDP. In this section, we shall identify the best performing branches of the manufacturing sector in terms of productivity and labour elasticity, and examine whether labour has shifted from the low to the high productivity branches. In the following section, we shall explore the labour movement within the manufacturing sector, at two digits of the International Standard Industrial Classification, according to the structure given by the UNIDO database.

The reason for going into a more detailed observation of the labour elasticity of manufacturing is that manufactures are the sector with the highest potential of productivity growth and technological innovation and have intensive multiplier effects (Kaldor, 1981). In addition, exports of manufactures are the most dynamic segment of international trade and intra-industry trade. Indeed, the exchange of industrial components is the fastest growing area of international trade (Haussman et al., 2005; Rodrik, 2006). With increasing urbanization and income, the income elasticity of the demand for manufactured goods is larger and, to satisfy domestic demand, the manufacturing sector must develop at a fast rate. There is a need for a strong manufacturing sector to respond to higher urban employment and increasing income in order to enhance the growth potential of the economy. In China, it was the growth of domestic demand, rather than exports, which caused the annual creation of 8 million jobs during the period 1995-2005. "…the growth in domestic demand led to three-times more employment gains than did exports over 2000-2005" (Feenstra et al., 2007)

Table 4.4 presents the most important branches in terms of GDP generation in Chile and Mexico. Food production (31), chemistry, oil and plastics (35) and iron and non-ferrous metals (37) are the most important branches in Chile. The first two are the biggest employers, while the iron and non-ferrous metals branch has the highest productivity. Chile shows constant increases in productivity in all its most important areas of activity. In Mexico the largest contribution to GDP and employment comes from metal works and machinery (38), followed by food, tobacco, beverages (31) and chemistry, oil and plastics (35). The productivity trend is less positive than in Chile, since only two branches (37 and

38) demonstrate constant increases, and sectoral productivity has expanded at a slower pace than in Chile.

We calculated from UNIDO (2006) the weight of exports in the principal manufacturing activities, which signals the specialization of each country. In Chile, the most important export activity is iron and non-ferrous metals (37), with about 45 per cent of total manufactured exports. In Mexico, the most export-oriented activity is metal works and machinery (38), which has a higher share of sectoral exports than in employment or GDP. Mexican oil exports account for only 2 per cent of total exports. This divergence shows a higher Chilean dependence on natural resources-based exports. The relation between the share in exports and in employment of branch (37) for Chile and branch (38) for Mexico also shows the contrasting effect on job creation of these two specializations. In Chile, the ratio of exports to employment is 45.6 to 4.7, while in Mexico it is 73.8 to 27.0. It is to be expected that an increase in exports in Mexico through branch (38) would bring about larger increases in employment than an export boom in Chile. The effects on poverty of an export boom in Chile would depend on the way the Government takes advantage of the windfall.

Table 4.4   Chile and Mexico: Changes in the manufacturing sector, 1980-2000

Branch	Period	Chile				Mexico			
		Share in product (%)	Share in emplyt (%)	Prodvty**	Product*	Share in product (%)	Share in emplyt (%)	Prodvty**	Product*
30	82-00	100	100	35.3	9.5	100	100	66.9	74.9
	82-91	100	100	32.2	7.4	100	100	66.3	63.7
	91-00	100	100	38.6	12.1	100	100	69.1	86.1
31	82-00	27.48	30.03	32.4	2.64	22.86	21.82	70.6	17.3
	82-91	26.20	28.80	29.4	1.93	21.22	19.02	73.8	13.5
	91-00	29.01	31.49	35.5	3.52	24.54	24.53	69.6	21.0
35	82-00	20.61	12.93	56.3	1.92	19.66	17.16	76.1	14.5
	82-91	20.96	12.10	56.2	1.52	21.03	17.53	79.0	13.3
	91-00	20.04	13.91	55.4	2.42	18.21	16.92	74.1	15.6
37	82-00	23.10	6.23	134.5	2.12	11.44	6.14	125.1	8.2
	82-91	25.28	7.04	118.8	1.85	13.47	7.41	120.2	8.5
	91-00	20.21	5.07	154.1	2.45	9.21	4.83	131.2	7.9
38	82-00	8.51	14.89	19.9	0.83	30.37	27.92	74.0	23.2
	82-91	7.88	14.60	17.1	0.60	28.44	30.06	63.3	18.3
	91-00	9.46	15.33	23.5	1.14	32.70	26.08	86.4	28.4
39	82-00	0.13	0.39	11.8	0.01	0.32	0.76	28.7	0.2
	82-91	0.10	0.39	9.1	0.01	0.31	0.63	33.1	0.2
	91-00	0.15	0.40	14.7	0.02	0.32	0.89	24.9	0.3

Source: Authors own elaboration based on UNIDO: *Industrial Statistics Database, 2006*; and World Bank: *World Development Indicators 2008*. In percentages of the total sector. * Constant values in thousands, USD 2,000. ** Constant values in billions, USD 2,000. 31 = Food, tobacco, beverages; 35= Chemistry, oil, plastics; 37= Iron and non ferrous metals; 38= Metal works and machinery; 39= Other manufactures.

Table 4.5 presents the evolution of GDP, productivity, elasticity and employment for the manufactures sector and for the three branches with the fastest productivity growth in Chile, Total manufacturing productivity expanded while employment decreased, which produced a negative and falling labour elasticity. These results coincide with the analysis of the previous section, where we suggested that manufactures were not absorbing employment and were not the main job generator. The second and third fastest growing branches (36 and 37) did not share the same features: gains in productivity and negative rates of employment growth and elasticity. Iron and non-ferrous metals (37) had the highest productivity per worker, but lost jobs. The chemical, oil, coal and plastics industry (35) and food processing (31) were the only two branches that did absorb employment, but their productivity growth was below average. Due to its large share of total employment and GDP, the effects of the expansion of production of the food industries imply important gains in job generation. Its potential may be high since it represents one of the Chilean export specializations.

Table 4.5 **Chile: Changes in the structure of the manufactures sector, branches with the fastest productivity growth, 1980-2000**

Branch	Period	Product Growth %	Empl/ent Growth %	Producvty Growth %	+ Empl Elast-GDP	+Empl Elast-Pv
30	82-00	3.81	3.01	1.37	1.02	-1.02
	82-91	3.95	5.42	-1.26	1.37	-4.29
	91-00	4.48	0.43	4.97	0.10	0.09
31	82-00	4.64	4.41	0.71	0.39	-0.60
	82-91	4.44	7.02	-2.23	1.58	-3.15
	91-00	5.62	1.27	4.90	0.23	0.26
34	82-00	4.38	2.68	1.98	0.31	-0.41
	82-91	5.04	4.39	0.54	0.87	8.07
	91-00	5.29	1.43	4.49	0.27	0.32
35	82-00	4.00	5.44	-0.43	0.84	-0.84
	82-91	2.50	6.29	-3.34	2.51	-1.88
	91-00	6.36	4.75	3.20	0.75	1.48
37	82-00	4.22	-0.10	4.37	0.21	-0.04
	82-91	4.93	0.29	4.81	0.06	0.06
	91-00	3.46	-1.10	4.52	-0.32	-0.24

Source: Own elaboration based on UNIDO, *Industrial Database 2006*. 31 = Food, tobacco, beverages; 35= Chemistry, oil, plastics; 37= Iron and non-ferrous metals; 38= Metal works and machinery.

The total manufacturing sector in Mexico presents a mixed picture (Table 4.6). The sector grew during the period 1991-2000 at a healthy 4.7 per cent annual average, while employment had negative growth, resulting in falling GDP employment elasticity and volatile productivity growth. For the fast growing Mexican urban population, the possibilities of finding a good job in the manufacturing sector are not highly promising. We repeat here our comment about the feeble impact of the dramatic expansion of exports of manufactured goods on employment and incomes, which - from Osmani's perspective - may help to give a better idea of the effects of globalization on work elasticity. In Mexico (at least as far as the auto industry (38) is concerned) globalization has not increased the labour elasticity of production. In the regions in which the auto industry is located, for instance Puebla (where the German Volkswagen has a large production line), inflation is high, unemployment has increased, and agriculture and manufactures, as well as even the metal and machinery industries, have stagnated (Puyana, 2004). The Mexican automobile industry is outstanding. Its history goes back to the Import Substitution Industrialization (ISI) model and today it is the number one exporter; it also has the second highest and the fastest growing productivity per worker, while accounting for 33 and 25 per cent of total manufacturing GDP and employment, respectively. During the period 1991-2000, GDP increased by 6.4 per cent annually, but employment only by 0.27 per cent, resulting in a low labour elasticity. Productivity has displaced employment. Consequently, the main export activity may not have a significant impact on poverty reduction - in fact, it may even be negative, if the contraction of agriculture and manufactures is taken into account.

Table 4.6   Mexico: The pattern of growth of the manufacturing sector. Productivity and work elasticity, total and in the branches with the fastest productivity growth, 1981- 2000

Branch	Period	Product Growth %	Empl/ent Growth %	Producvty Growth %	* Empl Elast-GDP	*Empl Elast-Pv
30	84-00	4.19	-0.67	2.31	-0.54	-0.77
	84-91	3.66	-0.81	4.52	-0.22	-0.18
	91-00	4.65	-0.86	0.96	-0.18	-0.90
31	84-00	4.77	1.33	0.78	-0.21	-0.58
	84-91	4.84	2.20	3.59	0.45	0.61
	91-00	5.21	0.41	-1.09	0.08	-0.38
35	84-00	2.57	-0.47	0.75	-0.90	-0.45
	84-91	1.72	0.07	1.31	0.04	0.05
	91-00	2.92	-1.56	0.54	-0.53	-2.89
37	84-00	0.62	-2.75	3.04	0.11	0.00
	84-91	-1.98	-4.12	4.06	2.08	-1.02
	91-00	1.99	-2.22	2.45	-1.12	-0.91
38	84-00	7.27	-1.29	5.69	-0.27	-0.30
	84-91	8.44	-2.87	8.87	-0.34	-0.32
	91-00	6.40	0.27	3.78	0.04	0.07

Source: Own elaboration based on UNIDO: *Industrial Database 2006*. 31 = Food, tobacco, beverages; 35= Chemistry, oil, plastics; 37= Iron and non ferrous metals; 38= Metal works and machinery.
* To periods 1982-2000, the elasticities were calculated with ordinary least squares method.
Data were changed to nat. logaritmus and differentiated to prevent spurious regressions.

Other fast growing manufacturing activities during the period 1991-2000 were: food and tobacco (31); chemistry, oil and plastics (35); and iron and non-ferrous metals (37). However, as their elasticity was low and negative, the impact of their growth on employment and poverty was not high. Productivity growth may improve the salaries of the employees already working in these branches, but no new jobs are created. Food, textiles and apparel industries have traditionally been important job-creating activities - an importance that may also be attributed to the weight they have in total consumption, especially of low-income groups.

Generally speaking, the growth in manufactures and productivity increases have not brought about improvements in job generation, because of the rather weak expansion of their production and contribution to GDP.

5.   Economic growth and the labour market

5.1   General considerations about the evolution of the labour market

A knowledge of broader demographic trends is central to any study of the dynamics of poverty and its relation to economic growth and employment. High rates of demographic growth undeniably affect the well-being of the population, in the same way that dependency rates affect the capacity for domestic savings. Higher demographic growth demands increased investments to maintain constant the capital- labour ratio. And the demand for investments in human capital is greater in populations with high rates of demographic growth.

Between 1890 and 1930, Chile made great strides in reducing illiteracy to 25-30 per cent of the population above 15 years of age, while Mexico accomplished this during the period 1930-80 (Thorp, 1998). That difference underlines efforts in the expansion of public

education and improvements in productivity and in terms of social cohesion. That being said, over one hundred years were necessary for Chile and Mexico to reach levels of literacy similar to those of the United States. From 1930 to 1970, there were no important improvements in literacy levels, which might indicate that during the import substitution model no priority was given to basic education (Thorp, 1998).

In this section, we shall analyse three aspects of the labour market: first, the demographic trends, rates of participation and improvements in education; second, the evolution of urban unemployment and unemployment, by education levels; and third, the changing structure of employment.

5.2   The labour market

The transformations in the labour market during the past six decades are the result of several phenomena: the fall in the infant mortality rate and the increase in average life expectancy; the drop in the birth rate and the increase in the ageing population; and improvements in education. Globalization has turned cities into a hub of economic activity, displacing agriculture. On account of these factors and the liberalization of their markets, Chile and Mexico are today more vulnerable to economic cycles and external shocks. This is particularly true for Mexico because of its intensive integration into one single market - as the global financial crisis has proven (Swiston and Bayoumi, 2008; IMF, 2009). Mexico is the Latin American country that has registered the more intensive fall in GDP and the largest increases in poverty, due to the global financial crisis of 2007-09. Chile's GDP was less affected by the crisis on account, among other reasons, of the larger diversification of its external trade - both geographically and in terms of products. In addition, Chile controls short-term capital flows and established a solid stabilization fund. The 2008-09 financial crisis affected the labour market in both countries, but Chile to a greater extent. In October 2009, the unemployment rate was 6.8 and 9.8 per cent in Mexico and Chile, respectively, and medium real salaries stagnated in both countries, while minimum real wages declined.

5.2.1 Growth of the working age population and of the labour force

In 1980, the Mexican working age population was five times larger than that of Chile; in 2008 the ratio was 6.2 - which indicates a larger expansion rate in Mexico. Something similar, although more intense, happened to the labour force or EAP, which started at a ratio of 5.4 to the total population in 1980 and increased to 6.5 in 2005. These two tendencies may indicate that Mexico has a higher rate of labour participation and labour intensity of GDP than Chile, a topic that will be explored later in this text. The ratio for the employed population and that of Chile increased in similar proportions from 5.82 in 1980 to 6.21 in 2008, implying a higher labour intensity of Mexican production.

5.2.2 Investments in education

Investments in human capital are a crucial factor to enhance labour productivity and the rate of economic growth (Zuluaga, 2007). However, this assumption is not fully verified in the region (Gutierrez et al., 2007; Fernández-Arias et al., 2005).   Education affects the capacity of a person to earn higher wages, thereby improving the welfare of the population as a whole. Education is an escape route out of poverty, allowing individuals to integrate into the growth process of the economy, thus strengthening the link between growth, employment and poverty reduction, (Khan, 2005; Zuluaga, 2007). The human capital theory suggests that society and individuals invest in education in order to reap future benefits (Schultz, 1961; Becker, 1962). Mincer (1974) explored the theory that higher

education provides higher returns and that returns to education are higher for the lowest income quintiles. The rate of returns declines in the top income quintiles. Therefore, education would reduce the concentration of income (Zuluaga, 2007)[14]. We normally expect higher education to be related to lower unemployment and higher salaries, but we shall examine this later in the text.

In general, the educational level of the economically active population in Chile is higher than that in Mexico. We would like to emphasize a number of factors; both countries have increased their level of education; and this level of education is higher in urban than in rural areas. While the gap has been reduced by one year in Chile, it has increased by two years in Mexico, reflecting, perhaps, one of the effects of the intensive Mexican migration: it is those who are better educated and fitter who abandon their places of origin and the country. In addition, females are slightly more educated than men in urban and in rural areas. Finally, Mexico reached a level of education in 2006 that had been reached by Chile ten years earlier (ECLAC, 2009a). As a general rule, educational levels and attendance are severely affected by economic crisis. People make every effort to remain in school, possibly shifting from private to public schools. Governments ask universities to make their classes bigger, and poor people sometimes keep their children at school to ensure they have the free breakfast provided by public schools. Usually the burden of the crisis falls upon the teachers as a result of declining real salaries. The educational infrastructure suffers as a consequence of falling investments.

Chile and Mexico have reduced the proportion of workers with zero to nine years of education, and increased substantially the share of those with ten or more years. However, while 73 per cent of the Chilean workforce have had ten or more years of education, only 46 per cent of the Mexican workforce are in this situation. In this country, workers with six to nine years of schooling are concentrated in 42 per cent of the Mexican economically active population, while the corresponding figure for Chile is 19.2 per cent. (ECLAC, 2009a).

5.2.3 Unemployment and education

We also found divergences between Mexico and Chile in this area. In the former, the lowest unemployment rate is found among the population with zero to five years of education, which is logical since the people in this category live under conditions of extreme poverty and are forced to work. The second lowest unemployment rate concerns the better educated. Chile presents the opposite picture: the educated have the lowest unemployment rate, followed by the less educated. The highest unemployment rate in Mexico is found among those who have six to nine years of education, while in Chile those with between 10 and 12 years of schooling have the highest rates of unemployment. In the period 1990-07, unemployment increased among the most educated. In both countries, the middle levels of education registered the highest levels of unemployment. In Chile, total unemployment reached its highest level from 2000 to 2005, severely affecting people with the lowest educational level. In both countries the highest educational levels seems to provide more help in finding employment.

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[14] Gains from education are not only pecuniary. There are political and social effects of education that are as much or even more important than the economic ones, but which go beyond the scope of the present study.

Table 5.1   Open urban unemployment rate by years of schooling, annual average rate of change

Years	Total		Between 0 and 5		From 6 to 9		From 10 to 12		13 and older	
Contry	Mexico	Chile	Mexico	Chile	Mexico	Chile	Mexico	Chile	Mexico	Chile
84-06	3.95	8.56	2.68	9.02	4.33	9.59	4.36	9.37	3.73	6.12
84-90	3.50	10.90	1.60	9.80	4.30	10.90	3.80	12.90	2.40	7.80
90-95	4.40	7.35	3.30	7.25	4.95	8.15	4.55	7.80	3.55	5.75
95-00	3.60	8.97	2.47	11.07	3.90	10.93	3.83	9.40	3.53	5.87
00-08	3.75	9.50	2.98	10.47	3.88	10.70	4.18	10.40	3.60	6.80

Source: Own elaboration based on: ECLAC: *Social Panorama of Latin America, 2009,* Statistical Annex, Box 20.

5.3   Emerging employment patterns

In Chile, the employment strategy for poverty reduction introduced by the Government aimed at: reducing the vulnerability of the less educated to fall into unemployment and poverty; bringing about changes in the labour force by further increasing the levels of education; and as a result of this education, encouraging the transition of workers into higher productivity activities. In Mexico, due to the low levels of unemployment, such a strategy would imply raising the quality of employment while maintaining the low levels of unemployment. This requires, in the first place, changes in the labour force by improving education and training among the less educated and changes in the demand for work, reducing the high imported content of production and exports. In both countries, increases in production should go hand in hand with productivity increases in order not to reduce employment.

5.3.1 Employment in low productivity areas

The linkage between growth, employment and poverty reduction is stronger when the demand for labour in higher productivity areas is such that workers move to these activities from the lower productivity sectors or branches. If that happens, the quality, and not only the quantity, of employment improves and wages will grow, suggesting that the integration factor is working for the benefit of the poor (Osmani, 2003; Islam, 2004; Kahn, 2005). This seems to be happening in Chile, whereas Mexico presents the opposite tendency (Table 5.2).

Once again, we shall illustrate the differences between the two countries. From 1990 to 2006, the proportion of Chilean workers engaged in low productivity jobs[15] grew smaller - from 39.0 to 30 per cent of total employment; in Mexico it grew larger - from 43 per cent in 1996 to 46 per cent in 2004 - in line with the evolution of wages and productivity upon which we commented earlier. The largest increases took place amongst, first, the Mexican wage workers in the private sector, and second, among the self-employed and the agricultural non-paid family workers. This may be explained by the effect of the reforms and the liberalization of the agricultural sector in NAFTA (Puyana and Romero, 2009; de Ingco, 2002; Puyana, 2007). In 2008, employment in low productivity areas in Mexico descended to 44 per cent - still remaining higher than in Chile. It is to be expected that in 2009 it will grow to record levels pari pasu with the increases in informal activities (National Statistics Office (INEGI), 2009).

[15] ECLAC defines employment in low productivity activities as employment in establishments with less than five workers, non-paid family workers and the self employed. See ECLAC (2007).

Table 5.2   Evolution of urban population working in low productivity activities, in percentages of the total occupied urban population, 1989-2008

	Total	Microenterprise				Domestic employment	Self empleoyes and unskilled worker		
		Employers	Wage Workers				Total	industry and construction	trade and services
			Total	professional and technical	non professional nor technical				
CHILE									
1990	38.9	0.8	10.3	0.9	9.4	7.0	20.9	5.7	14.0
1994	34.6	1.8	9.4	0.8	8.6	6.1	17.4	5.4	11.1
1996	34.4	2.0	10.2	1.0	9.2	6.1	16.1	4.2	10.6
1998	34.3	2.6	10.7	1.0	9.7	5.8	15.1	4.1	10.0
2000	31.8	2.4	8.3	0.8	7.5	6.3	14.8	4.3	9.7
2003	31.7	2.4	7.9	0.8	7.1	6.5	14.9	4.8	9.3
2006	30.7	1.7	7.2	0.7	6.5	5.8	15.9	4.8	10.0
MEXICO									
1989	…	2.8	…	…	…	2.7	18.9	3.0	12.5
1994	…	3.3	…	…	…	3.8	20.4	4.2	14.9
1996	43.6	3.8	15.7	1.2	14.6	3.6	20.5	3.8	15.7
1998	44.0	3.6	15.8	1.0	14.9	4.1	20.5	3.2	16.4
2002	47.1	3.3	18.3	1.3	17.0	4.6	20.9	4.2	16.1
2004	45.7	2.3	19.5	2.0	17.5	4.9	19.0	3.5	14.7
2005	42.8	2.4	17.1	1.6	15.5	4.5	18.8	3.2	15.1
2006	45.7	2.8	18.8	1.9	16.9	3.9	20.2	3.8	15.9
2008	43.7	3.4	20.5	1.8	18.7	4.6	15.1	2.7	12.1

Source: Own elaboration based on: ECLAC: *Social Panorama of Latin America, 2009,* Statistical Annex, Box 18-18.1. The unedited Statistical Annex was provided especially for this research by ECLAC in January 2009, for which we should like to thank them.

The trends in the Mexican labour market indicate that the drop in unemployment has been accompanied by a deteriorating quality of the jobs being created. Although the reduction of low productivity employment in Mexico may not have contributed to any cutback in poverty, in Chile this may have been an important factor. In both Chile and Mexico, the proportion of women working in low productivity activities is considerable larger than for men, reaching 38 per cent in the former country and 50 per in the latter.

Some of the differences in the labour dynamics of the two countries may be explained by the reforms. In Chile, there have been increases in productivity as a result of policies geared to particular sectors, especially agriculture. In Mexico, economic growth and productivity improvements have been less intensive. Since 1990, it is clear that the steady growth of the Chilean economy has brought about improvements in labour productivity and the quality of the jobs created. Both trends are evident from the reduction, since 1990, of the proportion of the economically active population working in low productivity activities (Edwards et al, 2002; and Edwards and Edwards, 2002).

5.3.2 The weight of the informal sector in the labour market

The weight of the informal sector in total employment may help to understand the differences in the structure of the labour markets and the trajectories in wages and salaries of Chile and Mexico. Table 5.3 shows the difference in the size of the informal sector of the two countries. In Mexico, in 1998, the proportion of informal[16] employees as a percentage of total employment was 2.5 times larger than in Chile in the same year. Hernandez Laos suggests that when the rural sector is considered, the Mexican informal sector may reach 70 per cent, which is near the figure estimated for 2006 by Puyana and Romero (2009). In

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[16] Informal employment is defined as workers without social security and labour contract according to, http://www.ilo.org/public/spanish/bureau/stat/download/guidelines/defempl.pdf, item (5).

1998, the proportion of informal work amongst the Mexican better-educated population was as high as 30.9 per cent of total employees, while in Chile it accounted for only 7.44 per cent.

Table 5.3   Chile and Mexico, informal sector as percentage of total employment, 1989-2006

	Total	Adults (25-64)					Youths (15-24)	
		Gender		Education			Gender	
		Female	Male	Low	Medium	High	Female	Male
Chile								
1990	21.39	21.36	15.36	27.90	13.48	6.09	36.39	34.67
1996	22.03	22.55	17.02	31.51	15.57	7.97	33.92	31.93
1998	22.90	23.71	17.46	33.94	17.17	7.44	34.35	35.44
2000	23.71	24.78	18.26	34.64	18.57	9.18	39.05	36.73
2003	22.45	24.12	17.00	32.34	18.32	9.99	39.01	33.06
2006	20.21	22.64	14.18	28.12	16.33	9.11	30.89	31.09
Mexico								
1998	57.79	49.57	53.97	72.58	38.07	30.92	59.55	69.70
2000	54.80	43.37	51.83	70.45	38.38	25.24	61.06	68.73
2002	58.83	51.66	54.98	74.64	44.14	27.96	62.64	73.54
2004	60.10	52.44	56.69	75.41	46.62	32.29	68.27	73.31
2005	61.10	53.82	57.70	77.03	47.47	34.96	70.57	73.50
2006	59.14	51.86	54.71	75.60	47.07	29.32	67.08	74.83

Source: Own elaboration based on SEDLAC (http://www.depeco.econo.unlp.edu.ar/), consulted on December 2009.

This trajectory is alarming, and may indicate that the labour market in both Chile and Mexico is moving towards a progressive informality, which covers all workers, especially new entrants - even those with a university degree. By 2005 informality among workers with a high level of education increased in Mexico by 12 per cent, while in Chile the corresponding increase was 64 per cent, despite the reforms to the labour market and social security policies designed to reduce informality by reducing the cost of labour. Salaries declined, or grew at a lower pace than the economy, and informality increased (Edwards et al., 2002).

The proportion of informal work in Mexico - 60 per cent of employment - is almost three times higher than that in Chile; therefore, the role played by the informal sector in the labour markets of each country should be different. The existence of such a large informal sector, especially in Mexico, suggests that both economies can be analysed by using the models developed for dual economies, where two sectors coexist: the modern and the backward sector absorbs the labour that the modern sector is unable to employ (Lewis, 1954; Romero and Fernandez, 2002).

Wages in the formal sector are determined for the wages in the informal sector. More specifically, wages and rents in the formal sector are fixed in relation to the average productivity in the informal sector (Puyana and Romero, 2009). Increases in total productivity result from investments and from shifts of factors from the backward sectors to modern sectors, i.e., from informal to formal activities. As the theory suggests, an unlimited supply of labour prevents wage increases, and gains in productivity are therefore translated mainly into higher average capital returns. If markets are imperfect, due to a high concentration of production and distribution, productivity gains may not be reflected in lower prices and in larger demand and production; consequently, productivity gains may imply job losses, as explained by Prabhat (2008)

5.3.3 Incomes of workers in low productive activities

In Mexico, the period of fastest economic expansion (1995-2000), and average income elasticity of employment elasticity above one, shows a decline in both minimum and medium real wages. This may have been an effect of the 1994-95 crisis, when employment fell and real wages deteriorated due to the devaluation of the peso and the inflation that

followed. In the period 2000-2003, Mexico had relatively low economic growth and high rates of increase in real medium salaries, suggesting that the supply of qualified work lagged behind the expansion of demand. That seems plausible considering the structure of the population by years of schooling.

The average incomes and wages of workers in low productivity activities are, as expected, lower than the remunerations of workers in higher productivity jobs. In total, the incomes of workers in low productivity activities are 17 per cent below the average income of the total Chilean workforce, while in Mexico the gap in 23 per cent. In Mexico the gap has widened and in Chile there has been a slight reduction (ECLAC, 2009a). The big differences in income between employers and wage earners are explained by the diversity in the incomes of professional and technicians. We detected two alarming tendencies in Mexico: first, the increased proportion of employees in low productivity activities; and second, the reduction of their incomes, both in absolute terms and in relation to average incomes. Given that 44 per cent of the total Mexican economically active population is engaged in low productivity activities, and that the share is increasing, the effects of wages on poverty levels may be rather low. In Chile, the gap is smaller and falling, indicating improvements in the quality of jobs created.

5.3.4 Gender labour discrimination

The gap in wages earned by women and their greater participation in low productivity activities indicates discrimination against working women, which is not diminishing despite improvements in education - more significant among women than among the male population. We should like to emphasize, first, that the gender gap is larger in Mexico than in Chile and, second, that conditions have not improved substantially for Mexican female workers. In fact, the proportion of female workers in low productivity jobs has increased, as indicated above. In 2008, the labour income earned by Mexican women represented only 62 per cent of mens' income. The gender gap in income and wages is smaller in Chile.

The discrimination in the labour market by gender is evident when comparing the ratio of female to male average wages and income, broken down by years of schooling, as illustrated in Table 5.4. We should expect that as womens' average years of schooling increase, there would be less disparities. However, women with more than 13 years of schooling face greater income discrimination that women with a lower level of education, and the gap in labour incomes and wages with equally educated men is wider. Difficulties in occupying posts with higher responsibilities and access to capital and to credit are the main reasons for this outcome. The difficulty of obtaining capital and jobs with higher responsibilities is revealed also by the difference between the wages for males and females, which is lower than the income differentials. On average, a Chilean female worker earns 14 per cent less than her male counterpart, and the gap has diminished by twenty percentage points since 1990. Gender discrimination in Mexico appears to be somewhat higher and harder to reduce. In 2008, womens' average labour income was 23 per cent lower than that of mens', but women with more than 13 years of schooling had a 48 per cent lower wage than men.

Table 5.4   Ratio of female to male average wages and income, by years of schooling, 1994-2008 (in percentages)

	Ratio of labour income Years education						Ratio of wages Years education					
	Total	0-3	4-6	7-9	10-12	Over 13	Total	0-3	4-6	7-9	10-12	Over 13
Chile												
1994	68	98	70	69	69	55	70	84	68	66	72	58
1998	66	70	63	65	70	54	74	72	64	71	75	63
2000	60	75	69	68	67	48	71	82	72	73	73	61
2006	70	71	73	65	67	62	86	76	75	75	76	71
México												
1994	57	58	50	72	73	49	68	59	65	81	83	56
1998	58	69	68	68	67	47	72	63	77	78	83	56
2000	58	67	59	55	72	49	72	67	61	63	84	60
2004	63	59	59	69	74	52	78	66	67	79	81	64
2006	63	48	59	68	72	56	76	61	70	74	81	66
2008	62	66	65	66	68	52	77	69	65	70	78	70

Source: Based on ECLAC: *Social Panorama of Latin America 2009*, Statistical Annex, Table 23.

6.   What lies behind the reduction of poverty?

6.1   Looking for clues for the reduction of poverty in Chile

After acknowledging that both countries have reduced poverty in the past 10 years, we shall now identify the ways and means each country deployed to reach that goal. In so doing, we shall focus on the last 25 years for which we have comparable poverty and inequality data. At first glance, we may discern two different experiences in economic growth. Table 6. suggests that on an annual average, during the period 1980-2008, the Chilean economy grew faster (5 per cent) than that of Mexico (2.84 per cent).

Table 6.1   Chile and Mexico: Annual average rates of change of GDP, poverty, indigence and income concentration, 1980-2008

	80-08	80-85	85-90	90-95	95-00	00-08
CHILE						
Poverty	-4.46	-3.28	-3.28	-6.24	-3.88	-5.10
Indigence	-6.52	-7.34	-7.34	-10.10	-3.43	-7.39
GINI	0.09	0.87	-0.45	-0.52	0.75	-1.23
GDP	5.02	2.31	6.81	7.88	5.27	4.22
MEXICO						
Poverty	0.94	4.00	4.00	0.61	0.44	-1.85
Indigence	-1.59	-1.25	-1.25	11.92	-7.21	-1.18
GINI	0.13	-0.92	3.10	0.13	0.03	-0.49
GDP	2.84	3.23	1.87	2.19	3.51	2.85

Source: Own elaboration based on: ECLAC, Economic Development Division, consulted at http://www.eclac.org/estadisticas/bases/.

Chile cut poverty and indigence in the period 1990-2000, when the rates of economic expansion exceeded 7 per cent per year, and again during the period 2000-08 but at lower rates of GDP growth - an effect of the poverty reduction during the preceding years. In Mexico, the rates of GDP growth were below 2 per cent during the period 1985-90, which brought about increased poverty and extreme poverty that surpassed the double-digit figures. From 1990 to 2006, a period during which economic growth recovered, both levels

of poverty levels decreased, but at a lower pace. As explained above[17], during the period 2007-2008, even before the crisis, poverty and indigence increased substantially.

6.1.1 The growth-employment nexus and the reduction of poverty in Chile

Chile's better performance in poverty reduction may be ascribed to higher rates of growth and active distributive policies. It is normally expected that higher growth brings about increases in employment and decreased unemployment - and that the GDP elasticity of work will be positive. In Chile, the GDP elasticity of employment declined by over 60 per cent during the period under consideration, i.e. economic growth created less employment. As GDP growth gathered pace, its labour elasticity declined and unemployment accelerated, suggesting productivity gains and an economy that was becoming less labour-intensive. Khan (2005) suggests that higher GDP elasticity of employment "…is the outcome of the overall incentive system affecting the choice of labour intensity from alternative techniques. A high elasticity means that the overall incentive system is employment friendly. A low elasticity means that the overall incentive system is employment hostile" Khan (2005). We have, therefore to explore what factors prevented the Chilean economy from generating more employment and reducing unemployment. Table 6.2 presents the results obtained.

We estimated the partial elasticity of work with respect to wages (Khan 2005; Sundaram, et al., 2002) to explore the role of the labour costs in the contraction of labour. During the period 1980-2003, real average wages increased at a lower rate than total employment and total and per capita GDP. Therefore, wages were not the main cause for the faster expansion of unemployment. From 1980 to 1985, when Chile registered its lowest rates of growth of the entire period, elasticity of employment was above the unity, unemployment grew and wages fell. The labour market adjusted, reducing both salaries and jobs. The period of the fastest growth of total and per capita GDP was 1990-1995, when GDP elasticity of work fell to 0.3 per cent, suggesting that unemployment was low and that no new labour resources were available. The partial medium wage elasticity of work does not suggest that wages were key in the decline of the labour elasticity of GDP. Minimum wages and medium salaries increased, but less than per capita GDP - thus wages were not the main reason for the reduction of the job elasticity of production (see Table 6.2).

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[17] See Table 2.2.

Table 6.2   Chile: The growth factor behind the employment elasticity of GDP

Variable	Chile					
	80-08	80-85	85-90	90-95	95-00	00-08
Δ% Total GDP	5.02	2.31	6.81	7.88	5.27	4.22
Δ% GDP per capita	3.52	0.73	5.03	5.98	3.80	3.12
Δ% employment	2.85	2.44	4.87	2.44	1.73	3.34
Δ% unemployment	3.42	20.19	-7.88	-0.04	6.42	-1.45
Δ% poverty	-4.46	-3.28	-3.28	-6.24	-3.88	-5.10
Δ% indigence	-6.52	-7.34	-7.34	-10.10	-3.43	-7.39
Δ% GFKF	8.58	2.52	15.12	12.33	5.92	9.82
Δ% Capital per worker GDP	2.18	0.09	1.90	5.32	3.48	0.89
Δ% GDP intenst of work	-1.91	0.58	-1.78	-4.97	-3.24	-0.84
GDP Elastic of employt.	0.57	1.05	0.72	0.31	0.33	0.79
GDP Elastic of unemployt.	0.68	8.73	-1.16	-0.01	1.22	-0.34
Labour Elastic of medium wages	1.42	-2.00	3.82	0.56	0.58	2.12
Labour Elastic of minimum wages	1.21	-0.54	3.09	0.40	0.30	1.24
GFKF Labour elasticity	0.33	0.97	0.32	0.20	0.29	0.34

Source: Own elaboration based on A. Madisson at: http://www.conference-board.org/economics/downloads/TED09I.xls; World Bank: *World Development Indicators 2009*; World Bank and ECLAC Statistical Information Service at: www.eclac.org.

Total gross capital formation and the increase in capital per worker suggest that from 1985 onwards, the Chilean economy intensified the use of capital and reduced labour intensity, despite the fact that average wages grew at a lower pace than the economy. The evolution of wages may be related to two factors: the increase in the share of informal employment as a percentage of total employment that took place in Chile during the periods1998-2003; and the reduction in the share of workers in low productivity activities, indicating an improvement in the quality of the jobs created and the capacity of workers to integrate into this process.

6.1.2 Growth, employment elasticity and poverty reduction in Chile

How has poverty in Chile been affected by the trends in GDP growth and the labour elasticity of the economy? During the period 1980-2005, Chile succeeded in reducing the number of persons living in conditions of indigence and poverty. With poverty in decline, we might expect that the elasticity of poverty to GDP growth should be negative - and that was the case when there were very high rates of GDP growth from 1990 to 2007. The ratio of the rates of change of indigence to GDP growth, for the whole period, was -1.30. It was higher than for poverty, which coincided with the trajectory followed by minimum wages, earned by poor or extremely poor people when they are employed (see Table 6.3).

Table 6.3   Chile: The factors behind the reduction of poverty and indigence, 1980-2008

Variable	Chile					
	80-08	80-85	85-90	90-95	95-00	00-08
Δ% Total GDP	5.02	2.31	6.81	7.88	5.27	4.22
Δ% GDP per capita	3.52	0.73	5.03	5.98	3.80	3.12
Δ% employment	3.52	0.73	5.03	5.98	3.80	3.12
Δ% unemployment	2.85	2.44	4.87	2.44	1.73	3.34
Δ% GINI	0.09	0.87	-0.45	-0.52	0.75	-1.23
Δ% poverty	-4.46	-3.28	-3.28	-6.24	-3.88	-5.10
Δ% indigence	-6.52	-7.34	-7.34	-10.10	-3.43	-7.39
Ratio Δ%poveryt./Δ%GDP	-0.89	-1.42	-0.48	-0.79	-0.74	-1.21
Ratio Δ% indigence/Δ%Total GDP	-1.30	-3.17	-1.08	-1.28	-0.65	-1.75
Ratio Δ%poverty/Δ%employ	-1.27	-4.47	-0.65	-1.04	-1.02	-1.63
Ratio Δ%poverty/Δ%unemploy	-1.57	-1.35	-0.67	-2.56	-2.24	-1.53
Ratio Δ% indigence/Δ% employt	-1.85	-10.00	-1.46	-1.69	-0.90	-2.37
Ratio Δ% indigence/Δ% unemployt	-2.29	-3.01	-1.50	-4.14	-1.98	-2.21
Ratio Δ%indigence/Δ% GFKF	-0.76	-2.91	-0.49	-0.82	-0.58	-0.75
Ratio Δ%poverty/Δ% GFKF	-0.52	-1.30	-0.22	-0.51	-0.66	-0.52

Similarly, we expect the ratio of the rate of change of poverty and indigence to be negative when related to employment growth and positive when related to unemployment. We found that during the period 1980-95, the ratios were both positive because employment and unemployment as well as poverty and indigence moved in the same direction. Due to the enormous increase in unemployment from1980 to 1995, the ratio was lower and indicated the sensitivity of poverty to unemployment - and through it to GDP growth. Unemployment grew faster than employment and the other variables presented in the first section of Table 6.3. In our understanding, unemployment was the main reason for the increase during this period. Poverty and indigence are sensitive to a slowing down in growth, as indicated by the ratios calculated for the period when Chile was going through a crisis (1980-85).

But even with low growth rates, such as those registered during the period 1980-85, Chile managed to reduce poverty, especially extreme poverty, and unemployment. From 1990 to 2008, Chile had high and sustained growth rates (between 7.88 and 5.27 per cent), and succeeded in making substantial cuts in extreme poverty and unemployment. This economic growth was apparently needed to bring down open unemployment and to start curbing informal employment, ceteris paribus. Our suggestion about the improvement in the quality of jobs created and the progressive integration of workers into better-paid jobs is reflected in the negative and high value of the ratio of the changes in poverty and changes in Gross Capital Formation (GKF), which indicates that as investments grew, poverty declined (See Table 6.4). The increases in GKF that Chile experienced from 1985 onwards relates to its fast productivity growth, wage and income improvements, and employment generation (Scott, 1996).

6.1.3 Wages and poverty reduction in Chile

The evolution of poverty and indigence is, as a general rule, inversely related to real wages. That, at least, was the case in Chile - throughout all the periods illustrated in

Table 6.4. The rates of growth of real medium and minimum wages declined after the 1990-95 period, and consequently the value of the ratio increased. This diverging path of the rates of change of poverty and wages may suggest that, as the reduction of poverty gathers speed, the impact of salaries decline and other variables may contribute more intensively to the reduction of poverty, such as employment growth and the reduction of unemployment.

Table 6.4. Chile: Relations between poverty and real wages, 1980-2008

Variable	Chile					
	80-08	**80-85**	**85-90**	**90-95**	**95-00**	**00-08**
Δ% Total GDP	5.02	2.31	6.81	7.88	5.27	4.22
Δ% poverty	-4.46	-3.28	-3.28	-6.24	-3.88	-5.10
Δ% indigence	-6.52	-7.34	-7.34	-10.10	-3.43	-7.39
Δ% real averg wages	2.01	-1.22	2.84	4.38	2.97	1.57
Δ% real minim wages	2.36	-4.48	4.02	6.11	5.70	2.68
Ratio Δ%poveryt./Δ% real aver wages	-2.22	2.69	-1.15	-1.43	-1.30	-3.24
Ratio Δ%poveryt./Δ% real min. wages	-1.89	0.73	-0.82	-1.02	-0.68	-1.90
Ratio Δ%indigen./Δ% real aver wages	-3.25	6.02	-2.58	-2.31	-1.15	-4.69
Ratio Δ%indigen./Δ% real min. wages	-2.76	1.64	-1.83	-1.65	-0.60	-2.75

Source: Own elaboration based on World Bank: World Development Indicators, 2009; ECLAC: Statistical Information Service at: www.eclac.org; and A. Madisson at http://www.conference-board.org/economics/downloads/TED09I.xls.

6.1.4 Income concentration and poverty reduction in Chile

The impact of economic growth on the distribution of income is another way of trying to determine the nexus between the evolution of GDP and poverty. At the same level of per capita GDP, higher income concentration leads to higher poverty: "…countries with higher inequality levels require a faster growth rate to achieve the same poverty reduction than countries with low inequality" (López and Perry, 2008). Similarly, inequality delays growth and creates the conditions for the reproduction of poverty (Stewart, 1992; Goñi et al., 2007). In addition, inequality results in an inefficient allocation of resources (Deininger and Olinto, 2000) and in higher pressures for income distribution, which may generate fiscal deficits and slow down growth. Nevertheless, in these circumstances, fiscal policy does not distribute, and often inequality is higher after taxes and fiscal expenditure (Alesina, and Perotti, 1996; and Alesina and Rodrik, 1994; López and Perry, 2008).

Latin America is the region with the highest income concentration in the world, second only to sub -Saharan Africa (World Bank, 2006)¨ In that context, Chile and Mexico, with a Gini coefficient that in 2005 reached 58.2 and 52.2, respectively, rank amongst the Latin American countries with a relatively high concentration of both property and income (López and Perry, 2008). In the 1970s Chile was, after Argentina, the country with the most egalitarian income distribution. In 1970, the Gini coefficient of income concentration was 50.1 in Chile and 58.3 in Mexico. When the debt crisis exploded, in 1982, the Chilean Gini coefficient escalated to around 55 per cent, while that of Mexico went down to 46 per cent. In Chile, the increases in the concentration of income resulted from the economic model introduced by the military regime; this consisted mainly of the partial reversal of the land reform, privatization, the radical liberalization of the foreign trade regimes, fiscal adjustment – all of which engendered unemployment. These same factors explain the growth of the Mexican Gini coefficient after the debt crisis in the early 1980s. After the period 1980-85, Chilean inequality started declining, mainly thanks to the distributive policies initiated by President Aylwin, the head of the first democratic Government after the military regime. Table 6.5 shows that despite the distributive actions taken by Aylwin and the following presidents, income concentration increased by 0.78 per cent during the period 1990-95, which had relatively lower annual average rates of GDP. We expect the rates of growth of the Gini coefficient and employment to move in opposite directions and the resulting ratio to be negative. That is generally true, but not for the period 1995-2000 when GDP decelerated in relation to the two previous periods and employment generation was very low (Table 6.5). During the 2000-08 period, the ratios were once again positive, thanks the considerable generation of employment and despite the rather lower economic expansion.

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It is assumed that a reduction in unemployment leads to less income concentration, and a consequent positive ratio of changes in the Gini coefficient and unemployment - and this indeed was the outcome throughout most of the period. But the period 1990-95 was an exception, due to high rates of increases in total and per capita GDP. Employment expanded at a faster pace than unemployment, as did minimum and medium real wages, resulting in the decrease of the Gini coefficient, despite the increases in unemployment. Finally, we assume that the reduction of poverty and indigence is positively related to the reduction of the Gini coefficient, and the ratio to be positive. This was the case for two periods - 1990-95 and 2000-06. The first witnessed the highest growth recorded, and the second experienced lower growth; however, since the income concentration had been reduced in the previous years, smaller rates of growth were required to further reduce poverty (López and Perry, 2008).

Table 6.5   Chile: Annual rates of change in the Gini coefficient of income, 1980-2008

Variable	Chile					
	80-08	80-85	85-90	90-95	95-00	00-08
Δ% Total GDP	5.02	2.31	6.81	7.88	5.27	4.22
Δ% GINI	0.09	0.87	-0.45	-0.52	0.75	-1.23
Δ% poverty	-4.46	-3.28	-3.28	-6.24	-3.88	-5.10
Δ% indigence	-6.52	-7.34	-7.34	-10.10	-3.43	-7.39
Δ% employment	2.85	2.44	4.87	2.44	1.73	3.34
Δ% unemployment	3.42	20.19	-7.88	-0.04	6.42	-1.45
Ratio Δ% GINI/Δ% GDP	0.02	0.38	-0.07	-0.07	0.14	-0.29
Ratio Δ% GINI/Δ%employ	0.03	0.36	-0.09	-0.21	0.43	-0.37
Ratio Δ% GINI/Δ%unemploy	0.03	0.04	0.06	12.00	0.12	0.85
Ratio Δ% GINI/Δ% GFKF	0.01	0.35	-0.03	-0.04	0.13	-0.12
Ratio Δ% poverty/Δ% GINI	-50.21	-3.76	7.22	11.96	-5.16	4.16
Ratio Δ% indigence/Δ% GINI	-73.33	-8.40	16.14	19.37	-4.56	6.02

6.2   What lies behind the reduction of poverty in Mexico?

6.2.1 The growth- employment nexus and the reduction of poverty in Mexico

Mexico presents a different picture: lower rates of growth, weak productivity expansion and a labour market characterized by low unemployment, declining real wages and growing informality. Nevertheless, poverty, indigence and income concentration declined, as illustrated previously. Table 6.6 presents the GDP elasticity of work and the elasticities of labour in relation to minimum and medium wages and to capital formation. For the entire period under consideration, the Mexican economy grew at an annual rate of 2.84 per cent. That is lower than Chile and below the rates some authors consider as the minimum to reach substantial reduction in poverty (Moreno-Brid, 2008). In order to reduce poverty by half, Mexico should grow at 5 per cent annually (Hernández Laos, 1999).

Table 6.6   Mexico: The growth factor behind the employment elasticity of GDP

Variable	Mexico					
	80-08	80-85	85-90	90-95	95-00	00-08
Δ% Total GDP	2.84	3.23	1.87	2.20	3.52	2.84
Δ% GDP per capita	1.15	0.92	-0.13	0.32	1.95	1.76
Δ% employment	2.85	3.78	3.73	1.95	3.06	1.79
Δ% unemployment	4.91	6.69	-8.14	19.67	4.79	5.40
Δ% poverty	0.94	4.00	4.00	0.61	0.44	-1.85
Δ% indigence	-1.59	-1.25	-1.25	11.92	-7.21	-1.18
Δ% GFKF	3.89	0.47	3.45	1.97	6.30	4.78
Δ% Capital per worker GDP	-0.02	-0.56	-1.80	0.19	0.40	1.03
Δ% GDP intenst of work	0.08	0.69	1.91	-0.15	-0.33	-1.00
GDP Elastic of employment	1.00	1.17	2.00	0.89	0.87	0.63
GDP Elastic of unemployment	1.73	2.07	-4.36	8.94	1.36	1.90
Labour Elastic of medium wages	12.04	-0.78	5.05	0.65	-1.45	0.83
Labour Elastic of minimum wages	-0.71	-0.61	-0.52	-0.35	-0.75	-5.20
GFKF Labour elasticity	0.73	8.11	1.08	0.99	0.49	0.38

Source: *Own elaboration based on World Bank: World Development Indicators 2009; ECLAC: Statistical Information Service at: www.eclac.org; A, Madisson at: http://www.conference-board.org/economics/downloads/TED09I.xls.*

Unemployment appears to be more sensitive to changes in GDP, although in an inverse direction. For instance, when the growth rate of the Mexican economy declined to an annual 1.87 per cent during the 1985-90 period, unemployment decreased by 8 per cent. This might have been the result of the drastic fall in real wages, which then boosted the participation rate. This effect is consistent with the increase in the informal sector and the proportion of workers in low productivity activities. The low rate of investment per worker also indicates rather weak productivity growth. Contrary to what we have concluded for Chile, Mexico is not moving towards an overall improvement in the quality of work. Employment has not moved from poor quality, low productivity, and badly paid jobs to better employment conditions (see table 6.6). There were two periods (1990-95 and 2000-08), during which real medium wages increased at a higher speed than total and per capita GDP. However, real minimum wages dropped, as did GDP labour elasticity. The partial labour elasticity of real minimum wages, illustrated in Table 6.6 (line 5), is systematically higher than that of real medium wages, with the exception of the period 2000-08, when there was a negligible reduction in the minimum wage and a very high increase in medium wages - which may have triggered the 14 per cent increase in unemployment (see Table 6.6).

6.2.2 Economic growth, employment elasticity and poverty reduction in Mexico

In Mexico, the period 1990-95 was the most critical in terms of poverty and income concentration (Table 6.7), when poverty levels increased by 230 per cent. Poverty and indigence only declined in a sustained way after 1996 (Hernandez Laos, 1999). The contraction of poverty accelerated during the period 2000-06, which cannot be explained by the rather weak growth rates of the economy, as indicated by the ratios of both variables to GDP growth. The ratios between poverty reduction and the changes in employment had the expected negative sign and their value tended to increase, since the reduction in poverty was higher than the increases in employment. That was not the case with unemployment. In 1990-95 a high increase in unemployment coincided with a mild reduction in poverty and indigence, resulting in a large ratio of poverty (and indigence) to unemployment.

Table 6.7   Mexico: Some factors behind the reduction of poverty and indigence, 1980-2008

Variable	Mexico					
	80-08	80-85	85-90	90-95	95-00	00-08
Δ% Total GDP	2.84	3.23	1.87	2.20	3.52	2.84
Δ% GDP per capita	1.15	0.92	-0.13	0.32	1.95	1.76
Δ% employment	2.85	3.78	3.73	1.95	3.06	1.79
Δ% unemployment	4.91	6.69	-8.14	19.67	4.79	5.40
Δ% GINI	0.13	-0.92	3.10	0.13	0.03	-0.49
Δ% poverty	0.94	4.00	4.00	0.61	0.44	-1.85
Δ% indigence	-1.59	-1.25	-1.25	11.92	-7.21	-1.18
Ratio Δ%poverty/Δ%GDP	0.33	1.24	2.14	0.28	0.12	-0.65
Ratio Δ% indigence/Δ%Total GDP	-0.56	-0.39	-0.67	5.42	-2.05	-0.41
Ratio Δ%poverty/Δ%employ	0.33	1.06	1.07	0.31	0.14	-1.03
Ratio Δ%poverty/Δ%unemploy	0.19	0.60	-0.49	0.03	0.09	-0.34
Ratio Δ% indigence/Δ% employt	-0.56	-0.33	-0.33	6.11	-2.36	-0.66
Ratio Δ% indigence/Δ% unemployt	-0.32	-0.19	0.15	0.61	-1.50	-0.22
Ratio Δ%indigencet./Δ% GFKF	-0.41	-2.67	-0.36	6.06	-1.14	-0.25
Ratio Δ%poverty/Δ% GFKF	0.24	8.58	1.16	0.31	0.07	-0.39

Source: Own elaboration based on World Bank: *World Development Indicators 2009*; ECLAC: Statistical Information Service at: www.eclac.org; A. Madisson at: http://www.conference-board.org/economics/downloads/TED09I.xls.

6.2.3 Wages and the elasticity of poverty reduction in Mexico

As regards the relation between poverty reduction and wages, the picture is as follows. As we mentioned in Chapter 1, real minimum wages collapsed after the introduction of the new economic model, while medium real wages stagnated. That trend can be observed in the first column of Table 6.8.

Table 6.8   Mexico: Relations between poverty and real wages, 1980-2008

Variable	Mexico					
	80-08	80-85	85-90	90-95	95-00	00-08
Δ% Total GDP	2.84	3.23	1.87	2.20	3.52	2.84
Δ% poverty	0.94	4.00	4.00	0.61	0.44	-1.85
Δ% indigence	-1.59	-1.25	-1.25	11.92	-7.21	-1.18
Δ% real averg wages	0.24	-4.83	0.74	3.01	-2.12	2.17
Δ% real minim wages	-3.99	-6.18	-7.12	-5.62	-4.07	-0.35
Ratio Δ%poverty/Δ% real aver wages	3.98	-0.83	5.42	0.20	-0.21	-0.85
Ratio Δ%poverty./Δ% real min. wages	-0.24	-0.65	-0.56	-0.11	-0.11	5.36
Ratio Δ%indigen./Δ% real aver wages	-6.72	0.26	-1.69	3.96	3.41	-0.54
Ratio Δ%indigen./Δ% real min. wages	0.40	0.20	0.18	-2.12	1.77	3.41

Source: Own elaboration based on World Bank: *World Development Indicators 2009*; ECLAC: Statistical Information Service at: www.eclac.org; A. Madisson at: http://www.conference-board.org/economics/downloads/TED09I.xls.

During the period 1985-90, Mexican economic growth was weak (1.87 per cent); minimum wages collapsed by 7.1 per cent and medium salaries increased by 0.74 per cent. At the same time, poverty and indigence increased. The decline of the real minimum wage explains, at least partially, the rise in indigence and poverty that occurred from 1990 to 1995, even after economic growth had resumed. The elasticity of poverty in relation to minimum wages suggests that wages and salaries are not the main reason for the evolution of indigence or poverty, and they do not explain the changes in employment or unemployment.

6.2.4 Income concentration and poverty reduction in Mexico

The high income concentration in Mexico started to decline quite late, in the present century, when - for the first time since 1985 - the Gini coefficient dropped. In 2000-08, the GDP elasticity of the Gini coefficient was -0.17, which was lower than the value resulting

from the elasticity of the Gini coefficient in relation to employment. The diverging signs of these elasticities suggest that Gini is more responsive to job creation than to the GDP trajectory. Surprisingly, the value of the ratio to unemployment was quite low and did not present the expected sign since, during the period concerned, unemployment grew at a rate that exceeded the changes registered in the Gini coefficient or GDP. Unemployment does not affect the Gini coefficient, as do the other variables, because poor and extremely poor people are not among the unemployed and because salaries are relatively low. Considering the characteristics of the Mexican labour market and the labour force, distributive measures are therefore extremely important to reduce income inequality (see Table 6.9).

Table 6.9   Mexico: The evolution of the Gini coefficient of income concentration; annual average rates of change, 1980-2008

Variable	80-08	80-85	85-90	90-95	95-00	00-08
Δ% Total GDP	2.84	3.23	1.87	2.20	3.52	2.84
Δ% poverty	0.94	4.00	4.00	0.61	0.44	-1.85
Δ% indigence	-1.59	-1.25	-1.25	11.92	-7.21	-1.18
Δ% real averg wages	0.24	-4.83	0.74	3.01	-2.12	2.17
Δ% real minim wages	-3.99	-6.18	-7.12	-5.62	-4.07	-0.35
Ratio Δ% GINI/Δ% GDP	0.05	-0.28	1.66	0.06	0.01	-0.17
Ratio Δ% GINI/Δ%employ	0.05	-0.24	0.83	0.07	0.01	-0.27
Ratio Δ% GINI/Δ%unemploy	0.03	-0.14	-0.38	0.01	0.01	-0.09
Ratio Δ% GINI/Δ% GFKF	0.03	-1.97	0.90	0.07	0.00	-0.10
Ratio Δ% poverty/Δ% GINI	6.99	-4.35	1.29	4.66	17.15	3.78
Ratio Δ% indigence/Δ% GINI	-11.80	1.35	-0.40	90.49	-	2.41

Source: Own elaboration based on World Bank: *World Development Indicators 2009*; ECLAC*:* Statistical Information Service at: www.eclac.org; A. Madisson at: http://www.conference-board.org/economics/downloads/TED09I.xls.

6.3   Social expenditures and income concentration

Growth-generated resources are used by society to provide services to the poor to enhance their capabilities (Osmani, 2003). The extent to which a proportion of taxes are earmarked to finance the *social provision* depends upon each country's social contract. Today, political changes have occurred that have altered the content of economic policies - and society considers as normal levels of poverty and income concentration that some years ago would have been morally unacceptable. Precarious jobs and low wages are accepted as the expression of the market and as rational decisions of each person (Atkinson, 1999). In the liberal model, low taxation is the requisite *sine qua non* to guarantee high rates of return to capital and, with the same objective, labour reforms aimed at reducing the costs of labour. The liberalization of trade and capital accounts have intensified the tensions between mobile and immobile factors of production, between capital and labour, and between highly qualified and unqualified workers. The elasticity of substitution of unqualified labour by better-educated workers has risen. All these processes have reduced the income elasticity of the demand for labour (Bulmer-Thomas, 1996; Fairbrother, 2004; Atkinson, 1999)..

In this context, social expenditure aims at reducing the inequalities of primary income distribution, and raising the quality of the labour force "…so as to enhance their various capabilities".   If accurately designed, public expenditure in education and health will broaden the integrability factor that will increase "…the correspondence between the structure of opportunities that are opened up and the structure of capabilities possessed by the poor" (Osmani, 2003).

The principal thrust of tax and fiscal reforms was intended to: reduce the maximum tax rates on capital and income; increase value added taxes; and eliminate the zero tax on food and medicines. In addition, liberalization reduced fiscal income. The reduction of fiscal

expenditure, especially public investments, may diminish growth capacity and the ability to compete, with negative repercussions on employment.

Since 1990, public expenditure per head has increased in Chile and Mexico. Both countries have given priority to funding education, and this has increased more than expenditure on health on several occasions (see Table 6.10). Despite the fact that Mexican social expenditure per head is higher than in Chile, its percentage of both GDP and total expenditure is similar in both countries. This is surprising since the Mexican population is considerable larger.

In Chile, the greatest effort in social public expenditure was made during the period 1990-2001 and decelerated thereafter (2004-05). In both countries, social expenditure, as a percentage of GDP, remained constant, which suggests that the resources devoted to the accumulation of human capital grew alongside the economy. This was particularly the case in Mexico from 2000 to 2001 and in Chile from 2004 to 2005. Social expenditure follows the economic cycle and, in GDP downturns, social expenditure may fall more sharply than the economy (Table 6.10).

The increases in social expenditure as a proportion of total expenditure are of little relevance in evaluating its distributive effects, since total public expenditure has contracted as a percentage of GDP. One way to measure the extent to which social expenditure is distributive is to relate social expenditure as a percentage of GDP to the proportion of persons living in poverty or in extreme poverty conditions. If the quotient is higher than one, distribution is taking place. If the quotient equals one, social expenditure is neutral (Steward, 1999). From the incidence of poverty indexes presented in Table 6.9, it is clear that social expenditure as a proportion of GDP is lower than the extreme poverty incidence index and therefore is not distributive. If the reduction of total poverty is the target, social expenditure should be several times larger than it has been. Nevertheless, both countries have put in motion other programmes for poverty alleviation, which should be taken into account if we want to have a full picture of the impact of social policies.

Table 6.10   Social expenditure in Chile and Mexico, per capita, and as a percentage of GDP and total public expenditure, 1990-2008

	Chile			México		
	Education	Health	Total	Education	Health	Total
		Per capita			Per capita	
1990/1991	76.50	62.00	138.50	129.00	146.50	275.50
1994/1995	107.00	96.50	203.50	199.50	117.50	317.00
2000/2001	194.50	144.00	338.50	226.50	131.50	358.00
2004/2005	197.50	156.00	353.50	229.00	152.50	381.50
2006/2008	215.67	185.00	400.67	280.33	194.67	475.00
	Percentage of GDP			Percentage of GDP		
1990/1991	2.41	1.95	4.36	2.60	2.94	5.54
1994/1995	2.61	2.36	4.97	3.94	2.32	6.26
2000/2001	3.93	2.91	6.84	3.91	2.28	6.19
2004/2005	3.54	2.80	6.34	3.80	2.52	6.32
2006/2008	3.57	3.07	6.63	4.03	2.80	6.83
	Percentage of total public spending			Percentage of total public spending		
1990/1991	11.63	9.42	21.04	16.45	18.64	35.09
1994/1995	13.55	12.20	25.75	23.62	13.89	37.51
2000/2001	17.61	13.03	30.64	24.65	14.37	39.01
2004/2005	18.14	14.32	32.46	21.74	14.44	36.18
2006/2008	18.26	15.72	33.98	21.43	14.88	36.31

Source: ECLAC, on the basis of information from the Commission's social expenditure.

In general, throughout Latin America, fiscal policy is much less distributive than in Europe and other regions of the world. The deep roots of Latin American economic and social inequality go back to the colonial institutions, mainly the high concentration of land property (Lewis, 2003; Engerman et al., 2000; Acemoglu et al., 2001; OECD, 2006). Assets concentration should not be the only determinant of income distribution, and fiscal policy should aim to reduce disparities and improve the capabilities of all citizens to work and obtain better living conditions. In Latin America, this is not the case (López and Perry, 2008). Direct and indirect taxes and cash transferences have little effect on market income. Market income is "…largely determined by market rewards to the private assets and efforts of individuals, and by the underlying distribution of those private assets" (Goñi et al., 2007). Income, after taxes and transferences, in kind and in cash, is almost the same as market income. In Chile and Mexico, the countries with the most distributive fiscal policies, the difference between the Gini coefficient of the market and disposable income is 1.5 per cent; in Europe the difference is 12 per cent on average (Goñi et al., 2007).

Fiscal expenditure on education, health and cash transferences do help to reduce the Gini index of income concentration. During the period 2000-06, the reduction of the Gini was 0.32 in Chile and 1.22 in Mexico. Given the low GDP elasticity of the Gini, we may assume that the main factor for the reductions in inequality were fiscal policies, mainly cash transferences. These transferences support consumption and have little effect on the concentration of assets. Some of these transferences are given to poor families on condition that their children regularly attend school and undergo periodical health controls. Programmes of this kind are investments in human capital and their effects on income concentration and poverty are only measurable once the beneficiaries join the labour force. In Mexico, more children who finish the secondary school programme "Oportunidades" tend to migrate to the United States than those who have not been on the programme. These programmes alleviate poverty but do not affect income concentration.

Distributive policies have played an important role in the poverty reduction registered in Mexico and in Chile. These programmes, together with the recovery of GDP growth, were effective in Chile for bringing down the levels of indigence by almost three-quarters at the beginning of the present century. Mexico has reduced more intensively the concentration of income and only cut poverty by one quarter, at the most. In the period 2005-6, the incidence of poverty in Mexico was similar to that of Chile during the first years of the 1990s. Lower GDP, declining real salaries and weak productivity growth may help to explain such a different outcome.

Overall, we can conclude that the main explanation for the reduction of poverty in Chile and Mexico - but much more so in the case of the latter - are not the variables related to growth and to the employment intensity of the economy. In effect, the labour intensity of the product has declined in both countries. In Chile, there has been a relative increase in productivity, but not so much as to be the motor behind poverty reduction. In Mexico, productivity has stagnated. Poverty reduction is related to policy factors, such as expenditure in health and education, despite the fact that the redistributive elements of the fiscal policy are not so strong.

7. Conclusions

This paper analyses the economic trajectories of Chile and Mexico and the relations between economic growth and poverty reduction through the generation of employment. Chile and Mexico are medium-income developing countries, which liberalized their economies after a severe economic crisis. Chile dismantled the import substitution model at the beginning of the 1970s, and Mexico did the same in the 1980s. Both countries have fully liberalized the movement of goods and capitals and reduced the state interferences in

the market by selling all the state companies apart from oil and copper. The North American Free Trade Agreement (NAFTA), signed by the United States, Canada and Mexico entered into effect in 1994; Chile joined in 2005. After these reforms, both countries registered a severe increase in poverty and inequality.

In 1970 17 per cent of the population in Chile lived in poverty and 6 per cent in extreme poverty. After 1973, income concentration and poverty levels more than doubled. In 1990 almost 39 per cent of the population lived in poverty and 13 per cent in extreme poverty. A systematic reduction in poverty levels started after 1990, once the social policies implemented by the democratic regime started to bear fruit. In 2006, poverty affected 13.7 per cent of the population and extreme poverty 3.2 per cent. In 2005, and despite the reduction in poverty, the income concentration, with a Gini coefficient of income of 58.5 per cent, remained above the 1970 level (50.1 per cent).

In 1970, a higher poverty incidence affected the population in Mexico, where nearly 34 per cent lived in poverty and 18 per cent under extreme poverty conditions. Poverty levels increased up to 1996, when almost 53 per cent of the population lived in poverty and 22 per cent in extreme poverty. After 1998, both poverty and extreme poverty declined. By 2008, 34.8 per cent of the population were living in poverty and 11.2 per cent under extreme poverty conditions. In 1970, the Gini coefficient was 49 per cent, and it reached 52 per cent in 2008. Chile and Mexico have reduced poverty but not inequality.

The poverty reduction achieved by both countries for a number of years was not enough to compensate for the almost two "lost decades" - and the financial crisis that erupted in 2008-09 reversed the trend; poverty and income concentration have once again intensified.

The findings of the present study, which explains the variables linked to the reduction of poverty in Chile and Mexico, contribute to the important ILO-SIDA studies on the "growth-employment-poverty nexus", under the ILO-UNDP programme "Promoting Employment for Poverty Reduction". Several of the conclusions drafted in this work match the findings of some of the ILO-SIDA studies, such as those carried out in India, China, Bangladesh and others. We might therefore suggest that the findings have a more general application.

The Chilean and Mexican economies differ in many aspects but are similar in others. The comparative analysis sets out to illustrate differences and similarities and to find the influence of each of them in the diverging paths they have followed. The Chilean economy stagnated during the ISI process, while Mexico registered the highest rates of growth in more than a century. After implementing the new economic model, the Chilean economy started growing at rates never before registered, whilst Mexican GDP decelerated and has so far not recovered the rates it recorded during the period 1950-80.

The population and economy of Chile are several times smaller than those of Mexico. Chile achieved low rates of population growth early in the third decade of the twentieth century, and Mexico had high rates of demographic growth up to the end of that century. At the beginning of the 1970s, Chile had the lowest Gini index of income concentration of any country in Latin America, similar to that of the United States. Mexico had a higher income concentration but reduced it up to 1985. With the economic reforms in the mid 1970s, Chile embarked upon a radical liberal model, with a flat 10 per cent tariff on imports and very low income and personal taxes. However, it suffered a deep economic crisis in 1982, which forced the Government to revise the model. It introduced reforms in the tariff tax schedules and devaluated the currency. Years later, Chile introduced partial control of capital movements to harness capital flows volatility. In the 1990s and after the return to democratic rule, the Government enforced social policies to deal with the intense concentration of income. On account of its high growth rates during the past 15 years, its

solid institutions and considerable poverty reduction, experts of multilateral organizations and academic circles consider Chile an example of a well-managed economy.

Mexico presents another story altogether. The successive governments since 1982 have fully liberalized the Mexican economy, and it has been deeply integrated into the US economy. The growth rates of the economy have been disappointing, well below the level required to create formal employment and reduce poverty. Minimum and medium real salaries have declined considerably. Employment is low because of the considerable rise of informal labour. Poverty has decreased somehow faster than in Chile, because of the remittances of the Mexicans working in the United States and the programmes of poverty mitigation. The fact that in 2009 the financial crisis hit Mexico harder than any other country has put the model under severe scrutiny.

Contrary to what the structural reforms and liberalization measures promised, the tradable sectors are not gaining weight in the structure of the economies of Chile and Mexico. By no means does the 2006 contribution to GDP of the Chilean and Mexican tradable sectors correspond to the countries' level of development. It shows rather a premature decline in their contribution, which does not correspond to the normal process of development. The decline of agriculture began in the 1940s, with the import substitution model. For several reasons, the reforms of the 1980s did not reverse this decline. These reasons include: the speed of liberalization; the urban bias of the macroeconomic policies; the chronic deficit in public and private investments; and the distortion of agricultural prices induced by the policies of the developed countries. Today, at the beginning of 2010, it is evident that the food crisis is the result of the economic policies implemented in both developed and developing countries.

For countries such as Mexico and Chile, there are opportunities to reverse the discrimination against agriculture and to increase the sectoral contribution to GDP, somewhere near the "Chenery norm". High agricultural prices do not imply that increases in production will reduce prices and incomes. Enlarging the volume of production and at the same time increasing productivity will create employment and incomes in rural areas and reduce poverty. It is possible - and advisable - to formulate policies aimed at expanding the agricultural sector, as a process of "agricultural involution, an increase in agriculture's share of employment when industries and related modern activities failed to absorb labour…" (Khan, 2005). GDP growth in agriculture that maintains present employment and increases productivity will raise incomes and, in the mid-term, reduce migration to urban areas. With increased productivity, the process will not be negative at all. This strategy is valid for both countries, but more urgent in the case of Mexico.

Productivity is at the core of the differences in the pattern of economic growth of the two countries studied in the present work. Chile has managed to increase total and sectoral productivity and outperformed Mexico. The causes of the diverging paths of productivity are manifold. They include: reforms introduced in the Chilean banking system early in the twentieth century; educational levels; and more intensive investments, both as a percentage of GDP and per worker. Another important element is the geographical diversification and the structure of Chilean foreign trade. Chilean exports are more concentrated in resource-based products. In addition, Chilean agriculture is complementary to that of its principal markets: developed countries located in the northern hemisphere. Mexican agriculture competes with US agriculture in the sense that it produces the same tradable goods (especially corn, wheat, rice, cotton, fruits and vegetables) at different costs.

The changes of labour amongst sectors, and between the principal divisions of the manufacturing sector, do not indicate that labour is migrating from low productivity activities to the higher productivity sectors. In fact, the movement has been from agriculture to construction, the sector with the second lowest productivity. In both countries, mining is

the sector with the highest productivity but it is capital-intensive and, during the period analysed, it did not generate employment. Manufactures rank second in productivity but, as in the case of mining, it has failed to absorb labour. Chile registered improvements in the quality of employment and labour incomes in the rural areas that Mexico failed to do.

The new entrants to the fast growing urban labour market are inflating the informal sector. This does not imply, however, that poor workers, and those expelled from agriculture, have the qualities required to integrate into the growth process. Therefore, productivity gains from movements of factors of production are rather small and the impact on poverty is limited. Taking the Standard International Trade Classification (SITC) two-digit level of the manufacturing sector, labour has not moved to the high productivity branches – or to activities linked to the highest exports. All these elements explain why manufacturing has not attracted labour in a more intensive way.

The long-term models analysing the variables explaining the growth of employment and GDP suggest that in both countries the principal factors behind employment are GDP growth and investments as Gross Capital Formation (GKF) in percentages of GDP. In Chile, growth and investments have been more intensive and sustained than in Mexico, where investments stagnated at 19 per cent of GDP. Investments per worker have increased in Chile while declining in Mexico. Two other factors, albeit not so significant, have contributed to growth: education and inflation. In Mexico, in addition to GKF, the growth rates in the United States can have a strong influence on the growth tendencies of GDP and employment. The import and export coefficients are not significant. The share of agriculture in GDP and the urban population as a percentage of the total is significant and positive in Chile, while in Mexico the GDP and employment respond more to imports and primary education.

In both Chile and Mexico, the employment elasticity of GDP has been falling since the 1980s - and with it the labour intensity of the economy. The problem is that in Mexico these changes occurred while productivity was stagnating and salaries declining. In Mexico, the reduction of the labour intensity of the economy takes place in the framework of very low (around 3 per cent in normal times) open unemployment, while in Chile the lowest rate of unemployment is around 8 per cent of the working force. One factor behind the reduction of employment has been the contraction of the rate of participation in the EAP, which is considerable higher in Mexico.

The increase in employment alongside the decline of salaries has resulted in a negative wage elasticity of employment that has fallen during the period under examination. Salaries are not therefore the main reason for the reduction of the labour intensity of the two economies. Capital intensity has increased in Chile and Mexico.

There are a number of factors that may explain the weak nexus between growth, employment and incomes in Chile and Mexico. Some of these lie in the structure of the labour market, as well as the deep differences in educational levels between women and men and amongst rural and urban areas. Large sectors of the working force are engaged in low productivity activities and their earnings are below those of workers in higher productivity jobs. The problem is that the share of workers in low productivity activities has remained stable in Chile, despite high rates of economic growth, and has increased in Mexico, due to feeble growth.

Both countries have improved the educational levels of the workforce. The economic effects of investments in human capital have been different. In both countries, the reduction in poverty relates to income concentration, in the sense that higher levels of income and wealth concentration require faster rates of economic growth to reduce poverty.

In Chile, economic growth has supported the reduction of poverty in two ways: by improving salaries thanks to increasing productivity: and by providing the fiscal resources to finance targeted and conditioned poverty programmes. While Chile has registered increases in productivity and in salaries, Mexican productivity has not improved and salaries have deteriorated more sharply in Mexico than in Chile.

Since growth in Mexico has been sluggish, poverty reduction has more to do with factors not directly related to the pattern of growth. These factors include: the remittances of Mexican workers in the United States; the effects of the poverty-conditioned social programmes; and the considerable decline in population growth rates. The fiscal policies implemented in Mexico are not the result of a social pact to reduce poverty and inequality through progressive taxation and fiscal expenditure as they are in Chile. The enormous Mexican fiscal oil revenue has financed social programmes, which are marginal in the structure of total public expenditure. Chile has set up a stabilization fund out of the copper windfall to finance social expenditure and prevent economic stagnation, which helps to explain Chile's better economic performance in 2009.

Whether the present model of social policies and fiscal expenditure to reduce poverty and inequality will survive economic contraction remains to be seen. The 2009 crisis resulted in increased unemployment, contracted real salaries and reduced fiscal income; it also aggravated the food dependency situation. In any case, the recommendation is to build the conditions for the creation of better jobs on a sustainable basis. Social policy should be a central part of the economic model and not, as it is today, a complement to alleviate the pervasive effects of economic growth on the majority of the population.

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Annexes

Annex 1: The determinants of employment creation in Mexico and Chile

To explore the long-term determinants of employment generation in Chile and Mexico, we estimated a model based on the Solow-Swan model, modified according to Mankiw, Romer and Weil (1990). The following expression allows us to relate employment generation to growth variables:

$$\log L = \frac{\beta}{(1-\varepsilon-\eta)} + \frac{\varepsilon}{(1-\varepsilon-\eta)}\log K + \frac{\eta}{(1-\varepsilon-\eta)}\log H + \frac{1}{(1-\varepsilon-\eta)}\log Y + \frac{\phi}{(1-\varepsilon-\eta)}ind + \frac{\psi}{(1-\varepsilon-\eta)}Y_{t-1} + \frac{\delta}{(1-\varepsilon-\eta)}X + \xi_t$$

In estimating the employment model for each of the two countries, the dependent variable is the employed population (PO) and the independent variables are the same as in the growth model, presented below. We selected the most significant variables and corrected multicolinearity.

The variables for the models are:
GDP: Gross Domestic Product, expressed in dollars of 2000.
GFCF: Gross Fixed Capital Formation, expressed in dollars of 2000.
PO: Occupied Population.
HPRI: Population enrolled at the primary level of education.
HSEC: Population enrolled at the secondary level of education.
HTER: Population enrolled at the tertiary level of education.
KH: Human capital = HPRI+HSEC+HTER.
AGRO: Agriculture GDP as % of total GDP.
MANUF: Manufacture GDP as % of total GDP.
XP: Total exports as % of GDP.
MP: Total imports, as % of GDP.
GOVCONS: General government final consumption expenditure as % of GDP.
COPPER: Copper price at the London Stock Exchange
INFL: Annual inflation.
Oil: Oil price.
USA: GDP of United States expressed in dollars of 2000.
GDP_1: GDP in previous year, expressed in dollars of 2000. Lag variable.

Table A.1. Variables explaining employment changes in Chile and Mexico, 1908-2004

Chile			México		
Dependent Variable: DPO			Dependent Variable: DPO		
Method: Least Squares			Method: Least Squares		
Sample (adjusted): 1967-2005			Sample (adjusted): 1967-2005		
Variable	Coefficient	t-Statistic	Variable	Coefficient	t-Statistic
C	-0.024966	-1.66465	C	0.000432	0.056493
DFBKF	0.02212	2.638129	DPIB	0.538804	2.826323
DAGRO	0.01316	3.319606	DFBKF	-0.095752	-1.679448
DPRODAGR	-0.08087	-4.15662	DDHPRI	1.421382	2.901889
DPOBURB	2.881853	3.190384	DMP	0.004214	1.861162
DINFL	-1.31E-05	-0.809125	DPRODAGR	-0.128272	-2.403671
DMP	-0.000255	-0.456873	DDPOBURB	-19.10498	-6.570823
AR(5)	0.575909	9.343534	AR()	-4.08E-01	-2.348781
R-squared	0.60933		R-squared	0.67808	
Adjusted R-squared	0.521114		Adjusted R-squared	0.605388	
Durbin-Watson stat	1.825511		Durbin-Watson stat	1.642436	
F-statistic	6.907262		F-statistic	9.328174	
Prob(F-statistic)	0.000056		Prob(F-statistic)	0.000004	

Source: Own estimations based on data from World Bank, ECLAC, INEGI, Maddison, Universidad Católica de Chile.

Annex 2:   The growth model estimated

To explore the long-term determinants of Chilean and Mexican economic growth, we estimated a model based on the Solow-Swan model, modified according to Mankiw, Romer and Weil (1990). That is to say, we estimate equation 1.

$$\log Y = \beta + \varepsilon \log K + \eta \log H + (1 - \varepsilon - \eta)\log L + \phi ind + \psi Y_{t-1} + \delta X + \xi_t \quad (1)$$

The variables for the models are:
GDP: Gross Domestic Product, expressed in dollars of 2000.
GFCF: Gross Fixed Capital Formation, expressed in dollars of 2000.
PO: Occupied Population.
HPRI: Population enrolled at the primary level of education.
HSEC: Population enrolled at the secondary level of education.
HTER: Population enrolled at the tertiary level of education.
KH: Human capital = HPRI+HSEC+HTER.
AGRO: Agriculture GDP as % of total GDP.
MANUF: Manufacture GDP as % of total GDP.
XP: Total exports as % of GDP.
MP: Total imports, as % of GDP.
GOVCONS: General government final consumption expenditure as % of GDP.
COPPER: Copper price in the London Stock Exchange
INFL: Annual inflation.
Oil: Oil price.
USA: GDP of United States expressed in dollars of 2000.
GDP_1: GDP in previous year, expressed in dollars of 2000. Lag variable.

Table A.2   Factors explaining economic growth path in Chile and Mexico, 1980-2005

Chile			Mexico		
Dependent variable: DPIB			Dependent variable: DPIB		
Method: Least Squares			Method: Least Squares		
Sample (adjusted): 1962-2005			Sample (adjusted): 1962-2005		

Variable	Coefficient	t-Statistic	Variable	Coefficient	t-Statistic
C	0.0227	3.18231	C	-0.024654	-4.19119
DGFKF	0.307788	13.17904	DGFKF	0.243075	5.388893
DMANUF	0.0153	3.011834	DMP	0.004126	2.295466
DMP	-0.004149	-2.742217	DUSA	0.438431	2.478561
DINFL	-0.000128	-2.324304	DDGDP_1	0.631188	-7.890843
DCOPPER	-0.011476	-0.675537	DAGRi	0.024357	1.958533
DUSA	0.234103	1.175743	DCOIL	0.015626	1.36
			DINFL	-0.000364	-1.917374
			AR (2)	-0.433745	-2.589309

Source: Own estimations based on data from World Bank, ECLAC, INEGI, Maddison, Universidad Católica de Chile.

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