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TERRITORIAL DEVELOPMENT

REGIONAL DEVELOPMENT AND STRUCTURAL POLICY IN MEXICO

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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DÉVELOPPEMENT RÉGIONAL ET POLITIQUES STRUCTURELLES AU MEXIQUE

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FOREWORD

This report forms part of a series of country reports on regional problems and policies undertaken by the OECD Industry Committee's Working Party on Regional Development Policies.

Economic developments in a nation the size of Mexico cannot be understood without studying the country's regional characteristics. The geographical and ethnic diversity of the Federation, its cultural and historical traditions and its political structures, must all be taken into consideration if the Mexican economy is to be understood as a homogeneous entity. These marked and characteristic differences warrant specific policies whose impact on the population must be assessed in every case.

The Working Party established, as one of its priorities, an analysis of regional development in Mexico and decided to conduct a study visit from 14 to 18 October 1996. During the visit, the Working Party met frequently with national, regional and local authorities. The views of prominent businessmen and academics were also canvassed. This report sets out the Working Party's conclusions, as amended and developed in the light of its on-the-spot reviews.

The Working Party addressed policies intended to be explicitly regional, such as social policy with its important anti-poverty component, as well as those with implicit effects on the development of certain parts of the country, such as the energetic privatisation policy launched in the early 1980s. The Working Party extended its review to decentralisation policy, now a priority issue in Mexico.

In each of these areas, the report offers analyses which are aimed at clarifying the policy options of the coming decade and which address the issue of how to reconcile national development with the development of regions marked by great disparities, as well as that of the country's integration within the world economy. The report includes many tables, maps and figures which provide useful background material for decision-makers and specialists in the Mexican economy.

This report was drafted by Denis Besnainou and Laurent Davezies. It was prepared with the help of the Rural and Regional Development Programme's Secretariat and Anne le Roux of the Territorial Development Service. The report is published under the responsibility of the Secretary-General of the OECD.

EXECUTIVE SUMMARY

Although Mexico today has no regional policy as such, it does have social and sectoral policies with marked regional dimensions. This strategy can be qualified as an "implicit territorial strategy" and is reinforced by major structural reforms (economic reform, privatisation, decentralisation, social policy) focusing on the country's development mechanisms and improvement of the capacity of each territory to enhance its comparative advantages and factors of production.

THE REGIONAL DEVELOPMENT ASSESSMENT

If GDP per capita figures reflect important interregional disparities, nevertheless analysis of social problems, particularly deep poverty, and of development inequalities demonstrates rather surprisingly that levels of development are more homogeneous than expected. Poverty is more important in some regions, but exists in all of them; however if we consider the apparent productivity of labour in the *non-maquiladora* industry, the disparities are much lower. Income disparities among states depend less on productivity or wage gaps than on the employment rate in the modern sector. The small differentiation of wages depends on wage negotiation mechanisms and on the role of the public sector. This lack of wage differentiation could also explain the weakness of intra-regional dynamism (in terms of industrial growth) in the poorest regions.

Many other factors influence the localisation of industry and affect regional development, such as the availability of infrastructure and human capital and access to international markets.

THE TERRITORIAL CONSEQUENCES OF SECTORAL POLICIES

Mexico does not, strictly speaking, have a regional policy but *national policies with strong territorial implications*, such as social, training or R&D policies. These sectoral policies have spatial impacts given their different territorial targets.

In the territories, the federal government still controls large sectors of spending and decisions are made following a deconcentrated process (*i.e.*, the budgets and their utilisation are managed by state governments but largely decided by

the federal government, through the participation mechanism). This could largely be decentralised, by giving full responsibility over certain sectors to states or municipalities. This process does not facilitate the efficient combination and adaptation of the sectoral policies over the entire territory. Only the poverty alleviation policy has a suitable institutional framework which permits its territorial implementation with efficiency. The devolved sectoral policies should be progressively replaced by a wider decentralisation, a more explicit regional development strategy, and more efficient co-ordination mechanisms between the Federation and the states.

THE CONSEQUENCES OF STRUCTURAL REFORMS

Federal budget. The actual tax structure allows a redistribution of resources. Economic growth should be accompanied by increased fiscal resources and strengthened regional cohesion mechanisms. A fiscal reform could also give greater room for manoeuvre which would enable fiscal decentralisation to modify the percentage contributing shares of the regions. Such a reform would bring about an improved redistribution of resources without imposing an increased tax burden on the richest states.

Privatisation was quickly and vigorously implemented by the Mexican Government. Although considerable difficulties were encountered and the process has mainly benefited the more developed regions, Mexico has nevertheless been able to improve a major part of its infrastructure shortfall. As a consequence of growing pressures for decentralisation, deregulation organisation recommendations and regional concerns have been increasingly addressed by the national authorities. Consequently, a greater priority should be given to the training of regional managers involved in the selection of infrastructure projects and in the assessment of their territorial implications.

Decentralisation. Progress has been achieved in the decentralisation process. The challenge – within the framework of the country's territorial development strategy – is to reconcile the necessity of a large decentralisation process that favours giving responsibility to the actors concerned, which is unique in its principle and in its mechanisms, and the necessity of differentiating its implementation, according to the possibilities of each state and in accordance with the country's territorial development strategy.

MEXICO: GENERAL SITUATION

The inclusion of the United Mexican States in the group of OECD Member countries has added a major economy (the 11th largest in the group by GNP, with a GDP estimated in 1996 at US$316.6[1] billion) to an organisation which now represents nearly a billion individuals. However, as an emerging country Mexico ranks before Hungary, Poland and Turkey as one of the least developed economies of the Organisation, with a 1996 per capita GDP estimated at $US 3 471 in current value. In purchasing power parity the GDP per capita is estimated at $US 7 688.[2] This is barely one-third less than the average of Member countries. The geography, modern history and economy of this country have brought it to a cross-roads in political, economic, and social development and place it midway between the underdeveloped countries and the major industrial powers.

Mexico is a huge country of 96 million inhabitants (the third largest population of the OECD, after United States and Japan), covering nearly 2 million km^2. It is completely divided longitudinally by the Sierra Madre ranges, which produces major climatic and thus economic disparities between parts of the country. Its geographical and economic situation place it in a position midway between a North which is eight times richer (US$27 611 per capita GDP for the USA, against US$3 471 for Mexico) and a South which is four times as poor (US$980 per capita GNP for Guatemala).

MACROECONOMIC POLICIES

Mexico is also undergoing change in its economic policies. From 1970 to 1986, the economy passed through difficult periods, caused by serious budget and trade deficits, high inflation and excessive economic and monetary controls. Even though Mexico seems to have sustained good rates of growth between 1970 and 1980 (Table 1), a good part of this can be ascribed to its oil revenue. From 1980 onwards, Mexico fell behind in GDP growth rates when compared with other countries or groups of countries (Table 1). In terms of per capita GDP, this decline is even clearer with an average drop of 1.5 per cent per annum between 1980 and 1992. Despite, or because of, the strong rise in oil exports, imports exploded and led to the creation of a large external deficit. The turn-

Table 1. **Growth indicators**

Mexico and selected countries

	Annual average growth of GDP (%)		GNP per capita (US$)	Annual growth GDP per capita (%)
	1970-80	1980-92	1992	1980-92
Mexico	6.3	1.5	3 470	–0.2
Turkey	5.9	4.9	1 980	2.9
United States	2.8	2.7	23 240	1.7
Canada	4.6	2.8	20 710	1.8
The 23 richest countries	3.2	2.9	22 160	2.3

Source: *Report on World Development*, World Bank, 1994.

around of oil prices at the beginning of the 1980s took by surprise an economy with high inflation resulting from multiple, substantial public deficits and international public and private debts (nearly US$90 billion in 1982, in a context of sharp rises in interest rates). In July 1982 and again in 1985, the Mexican repayments crisis led the IMF and the central banks of the industrialised countries to intervene to reschedule the large national debt and allow the country to rekindle growth. After two or three years during which attempts were made to implement a plan for structural adjustment, the combination of rising inflation (more than 100 per cent in 1986), high public deficits (further accentuated by the emergency measures taken for the earthquake in 1985), and a strong drop in oil prices led to a new crisis, a drop in the GDP of nearly 4 per cent in 1986, and a stock market crash in 1987.

As from 1983, a real policy for structural adjustment of the country began to be applied under a new class of young leaders which led in 1986 to Mexico's inclusion in the GATT. In 1987, the Pact for Economic Solidarity (today called Alliance for Growth) allowed the government, with the co-operation of the principal actors within the economy, to begin controlling the factors governing inflation: reduction of the budget deficit, adjustment of prices, public rates, minimum wage, etc. At the same time the government launched a far-reaching programme of reductions in budget expenditures, privatisation of public enterprises, and deregulation of important economic sectors (especially transport and telecommunications). These measures quickly led to a very sharp drop in inflation, to the lowest level in 20 years in 1993, and to a reduction in the public debt and budget deficit, paving the way for surpluses from 1992 onward. Accelerated growth was then re-established in the context of a favourable world economic climate. First the Brady plan in 1989, then the signing and implementation of the North American Free Trade Agreement in 1994, have re-established international inves-

tor confidence, despite record trade deficits. This flow of foreign capital has risen from 1.5 to 8 billion dollars per annum between 1986 and 1994. This massive inflow of both productive and transferable capital has helped promote growth in the Mexican economy. At the same time, however, it increased the vulnerability of the economy in international financial markets before the monetary crisis of December 1994.

THE MONETARY CRISIS OF DECEMBER 1994

The full-scale monetary crisis of December 1994 was precipitated by the sudden interruption of foreign capital flows which, together with the low level of international reserves, led to a drastic devaluation of the peso and the decision to allow it to float. This decision reflected Mexico's inability to maintain the parity of a currency which was under increasing attack on the exchange markets and had become overvalued in relation to the Mexican economy's real performances and particularly its current payments deficit, which reached 8 per cent of GDP in 1994. International investors decided to withdraw their funds from Mexico and also from neighbouring Latin American countries, suddenly classing them among the high-risk countries.

In February 1995 a stabilisation plan was introduced with the help of the United States, the IMF and the BIS, with US$50 billion to back the peso in exchange markets. Strict application of the stabilisation plan by the Mexican authorities (tight fiscal settings, control of inflation, respect or even anticipation of debt maturities, etc.) helped to rapidly restore the confidence of markets in the country's economy and to restart growth on a sounder footing. While the devaluation made it possible to re-establish the competitiveness of Mexico's export industry, it immediately had a heavy negative impact on economic growth owing to the sudden rise in interest rates (for investment and consumer credit alike) and the increase in the country's dollar-denominated debt. 1995 thus saw a steep recession with GDP down 6.2 per cent.

The year 1996, with a real GDP growth of 5.1 per cent, saw renewed economic growth, led essentially by a surge in Mexican exports and investment, mainly in the export-oriented sectors. Private consumption also started to expand in 1996. OECD projections for 1997 (published in the middle of the year) show a strengthening of the recovery with real GDP growth at 5.5 per cent for the year. Annual inflation has maintained a clear downward trend in 1996 and into 1997. The Consumer Price Index rose by 27.7 per cent year on year in December 1996, almost one half of the inflation rate a year earlier. This was achieved by a tight monetary policy in conjunction with other macroeconomic policies, which led to a reduction in inflationary expectations. Volatility on the financial and foreign exchange markets was considerably reduced[3] during 1996 and the peso-dollar

exchange rate remained broadly stable after April 1996. The unemployment rate came down from its 7.6 per cent maximum in August 1995 to 4.1 per cent in December 1996. The jobs lost in the manufacturing sector in 1995 were not only recovered in 1996, but additional jobs were created. In 1996, public sector financial accounts were near equilibrium, as projected in the budget, with the deficit of the non-financial public sector equivalent to 0.1 per cent of GDP. The National Program for Development Financing (Programa Nacional de Financiamiento del Desarrollo) which was published in June 1997 includes economic targets for growth, investment and savings over the period 1997-2000.

STRUCTURAL POLICIES

Although the government has reacted positively to these short-term stabilisation problems, Mexico is still confronted with many serious structural problems, the foremost of these being the extreme poverty of nearly one-fourth of the population, inadequate social and physical infrastructures, and insufficient development of the country's human capital. These problems call for profound structural reforms, on which the country has already embarked vigorously (notably in its privatisation programme and its present efforts at decentralisation).

These structural problems and the way the Mexican Government is dealing with them have in common the fact that they directly concern the territories. The recent macroeconomic fluctuations have admittedly had differentiated effects in the Mexican regions – and this report will attempt to identify these effects – but it is essentially in the structural policy context that a regional analysis and Mexican public policies should be introduced.

Poverty, the question of infrastructures, problems concerning the environment and pollution management, and the development of human capital are all major issues for the future of Mexico's economy which obviously have strong regional implications and are the focal point of severe strains which could bring into question the nation's cohesion.

The previous reports of the OECD Working Party on Member countries' regional development problems and policies have focused on an evaluation of what is traditionally called their "regional policies", *i.e.*, government policies to achieve a better spatial distribution of human resources and activities, to bridge development differentials between regions, and to stimulate development of the poorest areas. The present report differs in this regard from its predecessors. First, because Mexico's development problems are not primarily regional ones. They are essentially economic and social problems affecting the whole country, the effectiveness of its management and its cohesion. Secondly because, as will be seen, there is no regionally policy, strictly speaking, in Mexico. The territorial dimension of Mexican economic development and public management is not so

much that of a more or less even distribution of growth over the country, as of the different territories' contribution, through better harnessing and enhancement of their factors of production, to the improvement of the Mexican economy's general position and its social development.

In this regard, the Mexican problem is relevant to all OECD Member countries, which are now tending to replace the traditional policies of direct incentives to the spreading of activity, *i.e.*, policies to stimulate the contribution of individual territories to national development, with indirect, structural action to improve the production environment (infrastructures, public management, technology transfers, etc.). As the Working Party understood during its visit to Mexico in October 1996, the structural reforms on which the country has vigorously embarked, and the analysis of their territorial dimensions, constitute an interesting and instructive case for the treatment of territorial problems also found in other OECD countries.

STRUCTURE AND SUMMARY OF THE REPORT

In addition to the introduction, the report comprises three chapters. The first covers a detailed analysis of Mexico's regional problems (Chapter 2). It will be seen that analysis of the social problems, extreme poverty in particular, and of economic development disparities unexpectedly reveals a greater homogeneity of development performance across the country than the aggregate indicators would suggest. Poverty affects some regions more than others but is absent from virtually none, however if we consider the apparent productivity of labour in the *non-maquiladora* industry,[4] the disparities are much lower.

Mexico has no regional policy,[5] properly speaking, but sectoral policies with a marked regional dimension, such as social policy, human resource training, R&D promotion, etc. Chapter 3 will endeavour to show that these different sectoral policies, because territorially targeted, have and should have spatially differentiated effects: poverty alleviation policies, for example, do not focus solely on the South but are given more importance there because the South has a higher concentration of poverty; policies to stimulate technology integration have more effects in the regions already more involved in modern production. There is no explicit *ex ante* territorial policy or strategy on the part of the federal government, the application of sectoral policies has differentiated regional effects *ex post*. This implicit strategy corresponds well with what can be observed in most emerging countries: the most useful aids in the least developed regions are those designed to raise household income and provide cover by basic social services. On the other hand, economic development aids are useful only if they are directed at regions that have already reached a certain stage in the development of their productive capacities. The spatial structure of Mexico's economic and

social problems is such that the two major sectoral policies, social and industrial, pursued by the federal government finally serve this strategy fairly faithfully.

This combination of sectoral policies which constitutes the implicit regional strategy of the federal government is reinforced by major structural reforms focusing on the country's development mechanisms and improvement of the different territories' capacity to enhance their comparative advantages and factors of production. Three of these essential mechanisms will be examined in Chapter 4.

i) First, the implicit solidarity induced by the interstate distribution of the federal budget, whereby the development of the country's richest areas also benefits the poorest areas as a result of budget transfers. The necessary improvement in the performances of the most developed regions, and therefore of the country, which the federal government has to encourage, augments rather than diminishes the chances of the least developed areas (consistent with the aforementioned strategy of a differentiated mix of "social regional policy" and "industrial regional policy"). This powerful mechanism of cohesion should tend to develop automatically in the future, through the combined effects of economic growth and change in the structure of the federal budget, which will leave room for some fiscal decentralisation to ease the effort of the regions that contribute most.

ii) Privatisation: the process was embarked upon vigorously and very rapidly by the Mexican Government, and although it encountered considerable difficulties of implementation and has tended to benefit the more developed regions, it has nevertheless enabled Mexico to quickly make good a large part of its infrastructure shortfall.

iii) Decentralisation, which is set to go ahead in Mexico, is probably the key mechanism that still requires a major structural shift. Analysis of the mechanisms now operating in Mexico – which seem to indicate a deconcentration rather than a decentralisation of the decision-making – suggests that the benefit of successful decentralisation rests essentially on the introduction of a democratic fiscal mechanism which will ensure that local decision-makers are responsible to their taxpaying electorate, that local expenditures are adjusted to specific local development needs, and that basic cohesion of the country is maintained by way of transfers. Large disparities in development and hence in the tax base between regions should not be an obstacle to decentralisation that is uniform in its principle and its mechanisms but differentiated in its effects, in harmony with the territorial but also democratic development strategy of the country.

NOTES

1. *Main Economic Indicators*, OECD, April 1997.

2. United States = 100, *Main Economic Indicators*, OECD, April 1997.

3. Across a range of 12 major currencies floating against the US dollar, the peso exchange rate was the second least volatile in 1996.

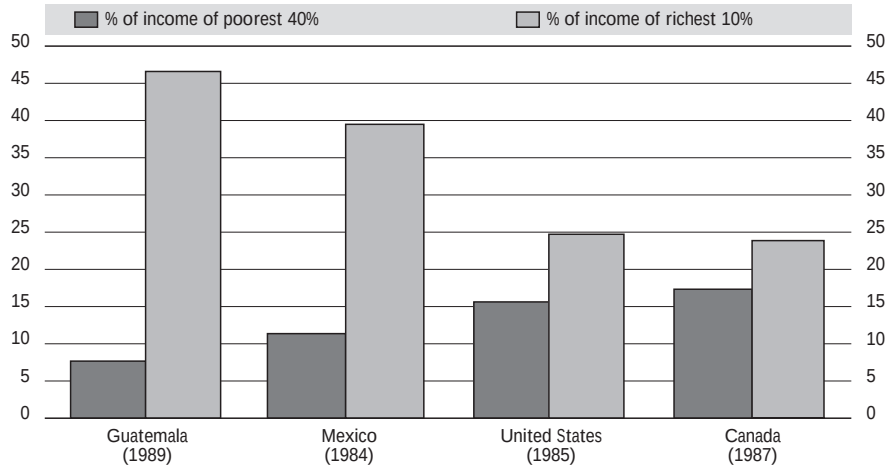
4. Great progress has been made by the ''maquiladora'' industry in terms of productivity in the last few years. Mexican exports have had a dynamic growth due to the increases in productivity in the 'maquiladoras'. The evidence shows that in 1996, the average productivity per worker in the manufacturing sector rose significantly, at an annual average rate of 8.5 per cent, as compared to a 4.8 per cent increase in 1995. *Source*: Banco de México, *The Mexican Economy 1997, Economic and Financial Developments in 1996, Policies for 1997.* México, Banco de México, 1997, pp. 21-22.

5. *I.e.,* government policies to achieve a better spatial distribution of human resources and activities, to bridge development differentials between regions, and to stimulate development of the poorest areas

REGIONAL ISSUES IN MEXICO

For the Mexican Government, the country's regional issues are fundamentally considered as social problems. A major portion of the Mexican population still lives in conditions that the government qualifies as "extreme poverty". In 1990, the national infant mortality rate – one of the best overall indicators of poverty – was still 35 per 1 000[1] (compared to 7 in the 23 richest countries), and only 55 per cent of school-aged children actually attended high schools. The malnutrition problems of one part of the population were so severe that the government set up a programme for distribution of *tortillas* and milk for 10 million people in the mid-1980s. Inequality in incomes again places Mexico midway between developing and industrialised countries (Figure 1): 40 per cent of the population have an

◆ Figure 1. ***Distribution of income among classes of the population Mexico and selected countries***



Source: World Bank, *World Bank Development Report*, 1994.

Map 1. ***The Mexican states***

Source: OECD.

average income 13 times less than the richest 10 per cent (24 times less in Guatemala, 6 times less in the United States and Canada).

The return to GDP growth from the end of the 1980s to 1994 was not sufficient to offset the social impact of the austerity measures introduced by the government. A large proportion of the population has seen its buying power deteriorate. The monetary crisis of 1994, resulting in a steep devaluation of the peso and a sharp recession in 1995, have also had a high social cost related to the sudden loss of household purchasing power which is still difficult to evaluate.

These social problems comprise a major regional dimension. It has been accepted, especially since Williamson (1965), that all countries are subject to the same law: geographical disparities deepen in boom periods, only to decrease once a certain threshold of wealth is reached.[2] It seems that this law is today being brought into question in industrialised countries where we are witnessing a structural renewal of regional disparities, with economic development concentrated in the more central regions of countries, and especially in the major cities. The constraints of international economic competition have restored to regions with a skilled and diverse labour force and effective infrastructures the competitive advantages that regions with low-cost labour tended to offer in past decades. This turnaround in the dynamics of inter-regional disparities, which seems to be assuming a structural dimension in OECD countries, is a consequence of the ongoing structural adjustment through which they have been passing for nearly 20 years. Nevertheless, even though this is a concern for Member country governments, it is occurring in a context of minor inter-regional disparities. This is not the case in Mexico, which is pursuing a substantial and accelerated programme of structural adjustment in a context of very significant social and geographical disparities.

The main inter-regional disparities in Mexico are geographical, social and economic. They are largely related to differentials in competitiveness, and linked to severe environmental problems in many areas of the country.

GEOGRAPHICAL FACTORS AFFECTING REGIONAL DEVELOPMENT

In this section, we have chosen to divide the country into several large regions[3] according to their very different climatic characteristics which have largely determined their respective development. The North of the country (40 per cent of the total surface area) is subject to a semidesertic climate and suffers from dryness. The South (20 per cent) has a humid, tropical climate. This was the cradle of the ancient civilisations, including the Maya in the South East. The Great Central Plateau (20 per cent), which stands at an altitude of between 1 000 and 2 000 metres, is the most temperate zone of the country and where a large part of the Mexican population has been concentrated historically (the

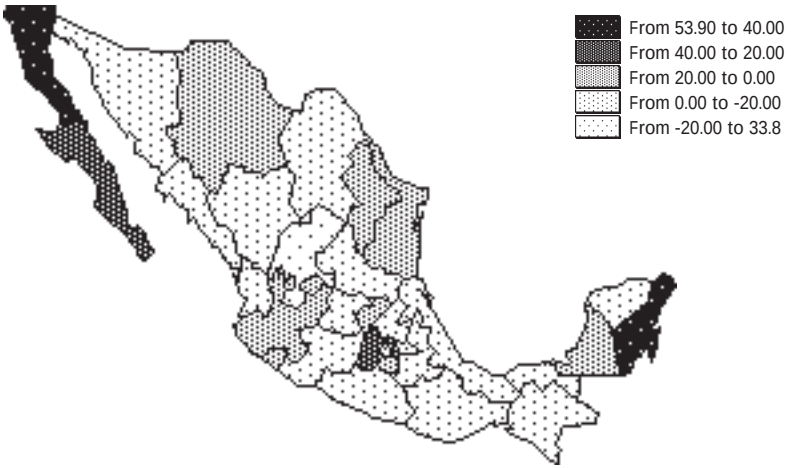
Aztecs before the Spanish). Today, almost half the country's population lives in this temperate zone. The Mexican Federal District and the six surrounding states[4] which together make up the economic "central zone" of the country contain 33 per cent of the country's population. Mexico City itself is located at over 2 000 metres. The remaining 15 per cent of the country's land area is located at altitudes over 2 000 metres and is for the most part settled.

The southern Mexican coastlines, both on the Pacific and Atlantic coasts, have historically been subject to tropical climatic conditions. Modern agricultural and urban development only began after the Second World War. The coastline on the Gulf of Mexico has benefited from the presence and development of substantial oil reserves. Mexico is, in fact, a major oil producer (2.3 million barrels a day), of which two thirds is processed by local petrochemical industries and one third exported. The oil wealth is managed by PEMEX, an enormous government-owned company, which is the biggest in the country (125 000 employees), and which – according to a ranking by the American magazine *Fortune* – is the 57th largest in the world. In 1993, levies on PEMEX made up more than 25 per cent of federal budget revenue. The Pacific coastline, on the other hand, has remained much less developed, and its southern reaches include some of the poorest states in the country (Chiapas, Oaxaca, Guerrero). This region, and particularly the states just mentioned, register negative net migrations.

The current expansion of the Yucatán Peninsula (Yucatán and Quintana Roo), which is particularly due to the zone's potential for tourism (with the creation of Cancún during the 1970*s*), should be noted. Industrialisation linked to the *maquila* system has followed on the heels of this development of tourism. Today, it is one of the most dynamic zones of the country, as shown by the Quintana Roo interstate immigration rate, the highest of all Mexican states (+54 per cent) (see Map 2).

The "border" states[5] of the country's North with desert environments have benefited from their proximity to the United States of America. Located near the North American market and offering very low-cost labour compared with their northern neighbour, they have taken full advantage of the transfer of production facilities – assembly plants in general – encouraged by the *maquila* system (an advantageous fiscal status granted by the Mexican Government to these factories, which was only available, up to the beginning of the 1980s, in the northern border zone). Given the desert environment, the North's urban system is particularly developed (around 92 per cent of the population of Nuevo León State, and 80 per cent of Baja California live in towns). Monterrey, the capital of Nuevo León with 2.5 million inhabitants, alone contains 80 per cent of the state's population. This proximity to the North and unusual urban concentration have encouraged an industrial boom, especially in the city of Monterrey, which is today the country's second largest economic capital after Mexico City. The northern region, because

◆ Map 2. ***Net migration in Mexican states, 1980-90***
In percentage terms (Mexico = 100)



Source: INEGI.

of its economic activity, registered among the highest positive net migrations of all Mexican states during the 1980-90 period: Baja California: 41 per cent, Nuevo León: 16 per cent, Tamaulipas: 9 per cent and Chihuaha: 7 per cent. By contrast, states such as Sonora and Coahuila, which border on less developed regions on the American side, experienced less encouraging situations and registered negative net migrations.

The Centre-North region (Durango, San Luis Potosí, Zacatecas, Aguascalientes, Guanuajuato and Queretaro), located in the Sierras between the central zone and the border, is also an arid zone. The presence of mineral resources (silver and iron) has driven the development of major cities like San Luis Potosí or Zacatecas, in which the majority of these states' populations live. However, the current closure of numerous mines has provoked a major reconversion crisis in the region. It is these states which registered, even higher than the poorer southwestern states, the highest negative net migrations in the 1980-90 period: Zacatecas: –34 per cent, Durango: –19 per cent, San Luis Potosí: –18 per cent. Jalisco State is an exception to the regional trend, and experienced strong growth and a very positive net migration[6] around the city of Guadalajara (the second largest in Mexico).

Seventy per cent of Mexico's population live in urban areas, according to the Mexican definition.[7] The country has about 100 cities of over 50 000 inhabitants (of which half have over 100 000 inhabitants). Three major cities dominate the others Mexico City (15 million inhabitants), Guadalajara (3 million) and Monterrey (2.6 million). However, there has been some decongestion of the central part of Mexico City (a decrease of nearly 1 per cent in the population of the Distrito Federal between 1980 and 1990). This high urban density is the result of rapid rural-urban migration which raised the population of cities with more than 400 000 inhabitants from 25 per cent of the national population in 1950 to 40 per cent in 1990. The present high urban and industrial concentration is causing serious environmental problems.

INTER-REGIONAL SOCIAL DISPARITIES

Within this context of widely varying natural assets, Mexico remains a poor country with very wide inter-regional social differences. Between the central zone and the northern states on the one hand, and the south-western states on the other, substantial discrepancies can be noted, no matter what indicator is chosen.

It must be stressed, before proceeding to an analysis of regional social situations, that the Mexican population, which is more than 90 per cent of mixed Indian/Spanish origin, remains highly diverse from an ethnic or cultural point of view. About 50 distinct Indian ethnic groups have been identified in Mexico, each with its own language and specific culture. A 1990 census identified over 5 million Indian language speakers of over 5 years of age. Amongst these last, a large number, of the order of 20 per cent, stated that they did not speak Spanish. These populations are particularly prevalent in the least developed states, like Campeche, Chiapas, Guerrero or Oaxaca, but are also present in the North like Tarahumaras, Chihuahua and Huicot region in Nayarit and Jalisco.

The different aspects of poverty

There are numerous studies aiming to develop global indicators of the social gaps between the Mexican states. Three of them,[8] based on: *i)* household income; *ii)* potential for human development (education, life expectancy and income); and *iii)* deficiencies within households (unemployment, illiteracy, insecurity), produce similar results. Chiapas, Oaxaca, and Guerrero, located in the country's south-east, systematically number among the 5 poorest states. However, it is striking to note that depending on the indicator chosen, other states appear to be seriously underdeveloped. Indicator *i)*: Hidalgo and Zacatecas; indicator *ii)*: Hidalgo and Michoacán; indicator *iii)*: Campeche and Veracruz. Moreover, we can also note that the states which appear to be the least affected by poverty differ depending on the indicator chosen. From the point of view of monetary poverty *i)* Baja

Table 2. **Selected social indicators**

The five poorest and five richest Mexican states, 1990

Infant mortality rate index[1]		% Households with running water[2]		% Households with electricity		% Adult illiteracy (+15 years)[2]		Physicians per 1 000 inhabitants	
Chiapas	58	Guerrero	56.9	Chiapas	66.9	Chiapas	30	Chiapas	0.52
Puebla	56	Oaxaca	58.1	San Luis Potosí	73.0	Oaxaca	28	Oaxaca	0.63
Guerrero	55	Tabasco	58.3	Veracruz	74.4	Guerrero	27	Puebla	0.65
Oaxaca	52	Chiapas	58.4	Oaxaca	78.1	Hidalgo	21	México	0.67
Zacatecas	48	Veracruz	59.8	Hidalgo	77.3	Puebla	19	San Luis Potosí	0.68
Tamaulipas	27	Coahuila	91.7	Coahuila	94.5	Coahuila	6	Yucatán	1.22
Dist. Federal	26	Colima	92.8	Aguascalientes	95.1	Baja Cal	5	Campeche	1.23
Baja Cal Sur	26	Nuevo León	92.9	Morelos	95.9	Baja Cal Sur	5	Colima	1.41
Baja Cal	24	Aguascalientes	95.6	Nuevo León	96.2	Nuevo León	5	Baja Cal	1.70
Nuevo León	24	Dist. Federal	96.3	Dist. Federal	99.3	Dist. Federal	4	Dist. Federal	2.35

1. *La Mortalidad infantil en México, 1990. Estimaciones por Entidad Federativa y Municipio.*
2. *XI Censo General de la Población y vivienda, 1990. Resumen General. Tabulados Básicos.*

Source: INEGI.

California, Sonora, Colima, Baja California Sur, and Sinaloa are the best positioned. In terms of human development potential *ii)* Distrito Federal, Nuevo León, Baja California, Coahuila, and Sonora are at the top of the list. The populations with the least deficiencies *iii)* are located in Aguascalientes, Nuevo León, Coahuila, Jalisco and Mexico State. This relatively poor correspondence between the poverty analyses shows that even though poverty is more prevalent in the Southwest than in the North (see Map 3), it affects all regions of the country. Table 2, which presents several other social indicators, shows that Mexico State, located in the central part of the country, registers among the worst scores in terms of infant mortality (see Map 4) and numbers of doctors per 1 000 inhabitants (which cannot be simply explained by the proximity of the better equipped Distrito Federal or by the economies of scale inherent in large urban zones).

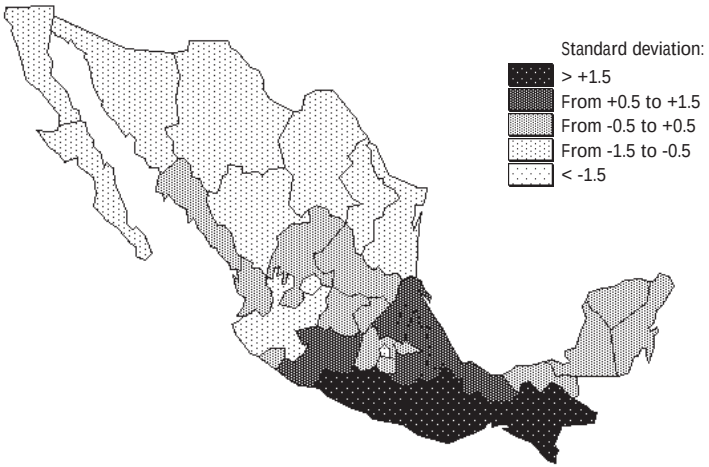
The poor are in fact spread out over the entire country, in both rural areas as well as in the big cities, in which a massive informal sector is developing: one quarter of total employment according to INEGI, or nearly 6 million employed persons, nearly half of whom live in Mexico City. The almost complete lack of a social welfare system within the country should also be noted, which makes living conditions all the more difficult for the poorest members of society.

The trend of poverty

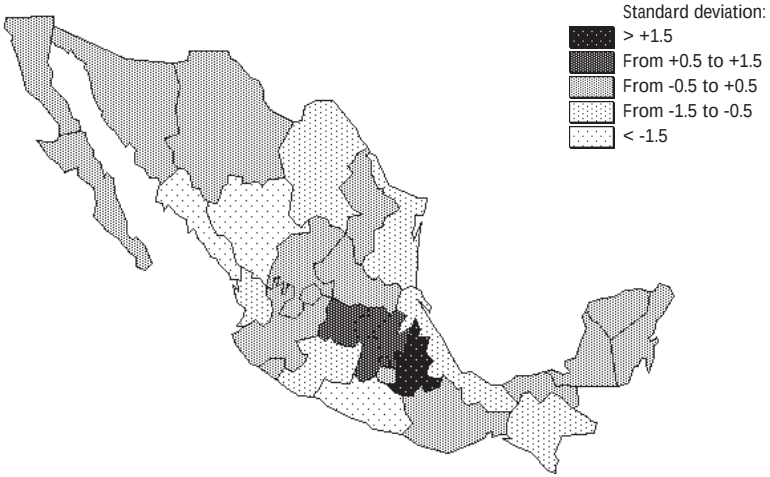
An important issue for the country's future concerns the growth of poverty within the country and its geographical distribution. A study published in 1990[9] suggests that following a period of decline, poverty began to grow again from 1981

◆ Maps 3 and 4. ***Two indicators of poverty in the Mexican states, 1990***
(Mexico = 100)

Map 3. ***Population aged >15 who are illiterate***



Map 4. ***Child deaths***



Source: INEGI.

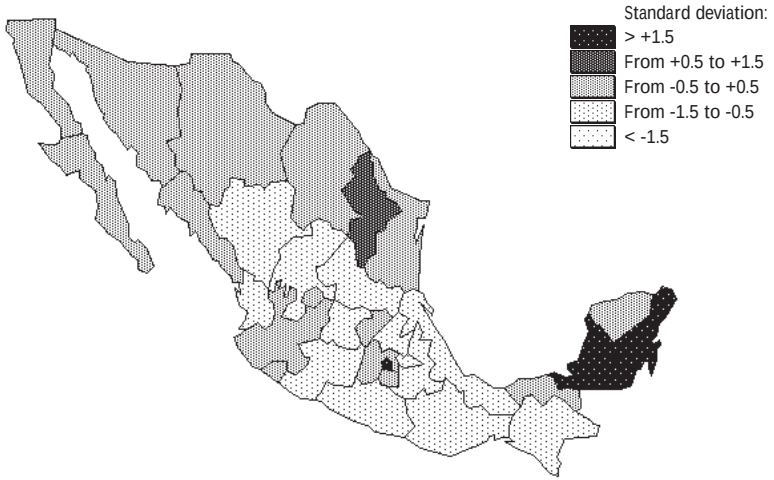
to 1988, but with a stabilisation of extreme poverty from 1984 onwards. This point merits further examination and needs to be brought up to date, inasmuch as it appears that the issue of regional disparities within the country primarily concerns the social dimension, while at the same time the main obstacle to structural adjustment of the country could be its social costs. The social impact of the 1994 monetary crisis and the 1995 recession needs to be better gauged, but there is reason to think that they caused a further deterioration in the situation of the poorest segments of the population.

INTER-REGIONAL ECONOMIC DISPARITIES IN MEXICO

Marked regional disparities in per capita product[10]

Available regional GDP data[11] (up to 1993) confirm substantial disparities in economic development between the Mexican states (see Map 5 and Table 3). In 1993 the difference in per capita GDP between the poorest state, Oaxaca (3 million inhabitants), and the Distrito Federal (9 million inhabitants) can be expressed as a ratio of 1:8. The ratio is only 1:4 between Chiapas (3 million inhabitants) and Nuevo León (3 million inhabitants), which are the second-lowest and second-highest ranking states in per capita GDP (eliminating the abnormal

◆ Map 5. ***Per capita GDP for Mexican states, 1993***
(Mexico = 100)



Source: INEGI.

Table 3. **Disparities in per capita GDP between Mexican states, 1993**
(Mexico = 100)

Index GDP per capita		Index GDP per capita		Index GDP per capita	
Oaxaca	42	Durango	72	Baja California Sur	106
Chiapas	43	San Luis Potosí	73	Querétaro	107
Michoacán	50	Yucatán	75	Baja California	112
Zacatecas	51	Sinaloa	77	Colima	113
Tlaxcala	57	México State	83	Coahuila	123
Guerrero	59	Tabasco	88	Sonora	123
Puebla	62	Tamaulipas	89	León	168
Veracruz	65	Aguascalientes	95	Quintana	203
Nayarit	68	Chihuahua	99	Federal	252
Hidalgo	68	Jalisco	100	Campeche	338
Guanajuato	68	Morelos	106	México (country)	100

Source: INEGI.

cases of Campeche and Quintana Roo, see below). The unweighted coefficient of variation (standard deviation/average of per capita GDP for all states) is 0.62, which is very high. However, it is difficult to make any international comparative judgements on assessments of inter-regional disparities. Territorial divisions and geographical configurations vary with each country, making comparison very problematical.

The three zones that emerge distinctly in terms of economic development are the centre of the Valley of Mexico, the northern border zone (and particularly Nuevo León) and the gulf zone (Campeche, Quintana Roo), which show the highest per capita GDP. The least developed zones are in the south-west (particularly Chiapas and Oaxaca) and centre-west (Michoacán, Zacatecas). It is striking to find marked disparities within the central zone: Mexico State (10 million inhabitants) has a per capita GDP more than three times lower than that of the central city zone (Distrito Federal).

In Mexico there is high economic concentration in the central part of the country. Excluding Jalisco State, where Guadalajara is located (7 per cent of Mexican GDP), the seven states of Distrito Federal, México, Morelos, Hidalgo, Querétaro, Puebla and Tlaxcala, which constitute the zone of influence of Mexico City, generated 43 per cent of national GDP in 1993, within only 5 per cent of the nation's surface area and for 33 per cent of its population. Spatial concentration is even higher in Mexico City (Distrito Federal and Mexico State), which generates 35 per cent of Mexican GDP with 22 per cent of the total population and 1 per cent of the national territory. Generally speaking, it is in the states which contain the biggest cities (which contain a large proportion of the states' populations) that

production and high levels of per capita GDP are located. This is especially the case for the three largest cities in the country: Mexico City, Guadalajara and Monterrey. Nearly 60 per cent of national GDP is concentrated in these three urban zones. This figure suggests that territorial management of the Mexican economy is primarily a matter of urban management.

Limitations of state per capita GDP as an indicator

Inter-regional economic disparities are traditionally measured, as has just been done here, by reference to per capita GDP. This indicator, useful as it is, has its limitations as a gauge of income disparities between regions. By assimilation with the practice regarding national aggregates (national product is often called national "income"), it is customary to use regional GDP in order to analyse inter-regional income disparities. This habit, while solidly established, is open to criticism, since a region's GDP, which is the sum total of its value added, goes only in part to form the income of the region's inhabitants (it is also a return to capital, which is often held outside the region concerned). The statistical concept of per capita GDP is therefore very ambiguous: it is not a true gauge of per capita income or of a region's productive performance (per capita GDP varies with labour force participation rates).

But the regional GDP indicator poses other problems, particularly in the case of a country like Mexico, when it is used to measure a region's mean level of development. There is a sort of statistical illusion conveyed by sectors like Mexican oil and petrochemicals, which are notable for being *i)* enormous generators of value added, *ii)* highly localised, and *iii)* with little positive impact on the economic development of the regions in which they are located (in the form of employment and household income).

To judge by the figures for per capita GDP, Campeche is currently the most developed region in Mexico. Admittedly Campeche experienced an economic surge in the 1970s when its offshore oilfields commenced production. Yet, as noted earlier, it is still one of the Mexican states most afflicted by poverty. The same applies to Quintana Roo, which has experienced very strong economic growth due to the development of tourism, especially in Cancún. But here again, this type of sector-specific development is very localised, in both the social and geographical contexts, and does not provide a true gauge of the state's mean level of development.

In order to measure the overall disparities in economic development, and get round what appears to be a bias in the analysis, it is possible to examine the sectoral structure of activities in the different states with the aid of two separate sets of statistics: *i)* employment, wages and output[12] per sector (private non-farm) in the states (in 1993) and *ii)* value added in ten major sectors (1993).

Small disparities in economic performance between states

The individual statistics for sector employment, wages and income by state give a clearer picture of the economic development performance of the different states. These results are aggregated in Table 4 and Figure 2 in terms of output per state. The coefficient of variation measuring interstate disparity of total output per employee is 0.61.[13]

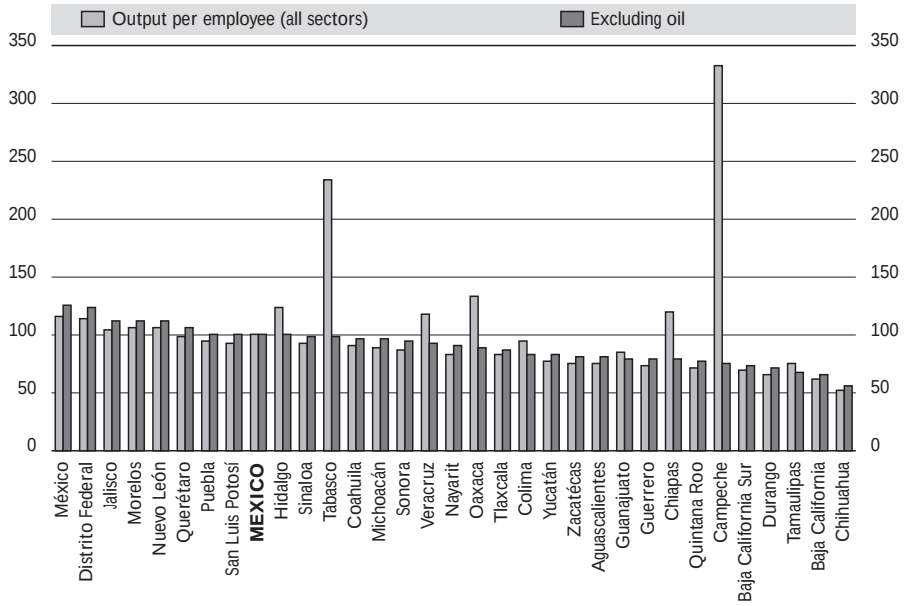
It was decided to calculate state-by-state output per employee, net of activities in mining, oil and petrochemicals, since these activities are highly localised, particularly in states that are otherwise poor, and tend to give a false impression of the real level of economic development. As can be seen from Table 4 and Figure 2, a very different ranking of states emerges as a result. Of the five major oil states – Campeche, Tabasco, Chiapas, Oaxaca and Veracruz – two especially, Campeche and Chiapas, and to a lesser extent the other three, show a steep loss of rank in terms of output per employee when this is measured net of oil and petrochemicals. The logical inference is that per capita GDP, already low in

Table 4. **Output per employee in the Mexican states in private non-farm activities**
Total excluding oil, mining and petrochemicals (Mexico = 100)

	Output per employee			Output per employee	
	Total	Less oil, mining and petro-chemicals		Total	Less oil, mining and petro-chemicals
Aguascalientes	75	80	Nuevo León	107	111
Baja California	60	66	Oaxaca	133	89
Baja California Sur	69	72	Puebla	94	100
Campeche	334	74	Querétaro	98	105
Chihuahua	52	56	Quintana Roo	71	76
Chiapas	118	79	Sinaloa	91	98
Coahuila	89	97	San Luis Potosí	92	100
Colima	94	83	Sonora	86	94
Distrito Federal	114	123	Tabasco	235	98
Durango	66	71	Tamaulipas	75	68
Guerrero	73	80	Tlaxcala	83	86
Guanajuato	85	80	Veracruz	116	91
Hidalgo	124	100	Yucatán	76	83
Jalisco	104	112	Zacatecas	74	82
México	115	125			
Michoacán	89	96	México (country)	100	100
Morelos	106	111	Max./min.	6	2
Nayarit	83	90	Stand. dev.	61	20

Source: INEGI.

◆ Figure 2. ***Output per employee in private non farm activities in the Mexican states***
Total excluding oil, mining and petrochemicals, 1993
(Index Mexico = 100)



Source: INEGI.

Campeche and Chiapas (the figures for total output per employee are relatively high there, while those for per capita GDP are low because of the population's very low labour force participation rate), indicates economic development and modernisation that in fact are all but absent. By contrast, the other three oil states have output per employee, net of oil and petrochemicals, close to the national average. Table 8, at the end of this section, gives the mean wage indices and coefficients of localisation of the states' main productive sectors, which affords a better insight into the problem of ''mono-industrial'' development in certain regions of Mexico.

The end result of this approach is a different picture of the interstate disparities in economic development. In terms of disparity in non-oil output per employee, the coefficient of variation falls from 0.6 to 0.2! Thus, economic dispari-

ties between states are relatively small, contrary to what the figures for per capita GDP would suggest.

The difference in results obtained with the oil-inclusive and oil-exclusive approaches to calculating interstate economic disparities can be attributed to two complementary factors:

- First there is the fact that per capita GDPs including oil give an exaggerated picture of the disparities between certain states (both in coefficient of variation and in maximum/minimum differential), *e.g.*, by assigning to Campeche a very high per capita GDP.
- But once the oil effect is screened out, this ''flattening'' of the disparity indicator appears to be due to narrow labour productivity[14] differentials between states.

It is surprising, in a country like Mexico where very backward areas in terms of economic development exist alongside others already apparently part of the modern industrial economy, to find such narrow differentials in productive performance.

On analysis, the wide differences in per capita GDP mentioned earlier have less to do with productivity differentials between Mexican states than with differentials in labour force participation rates (Map 6). The northern states, for example, appear more developed because they have a high participation rate, whereas they have only a poor level of output per employee (and analysis of mean wages reinforces this view – see Map 7). The economies of the Mexican regions thus present a complex picture. There is no geographical relationship between the interstate differences in participation rates (coefficient of variation: 0.42) and the differences in mean wages (coefficient of variation: 0.21).

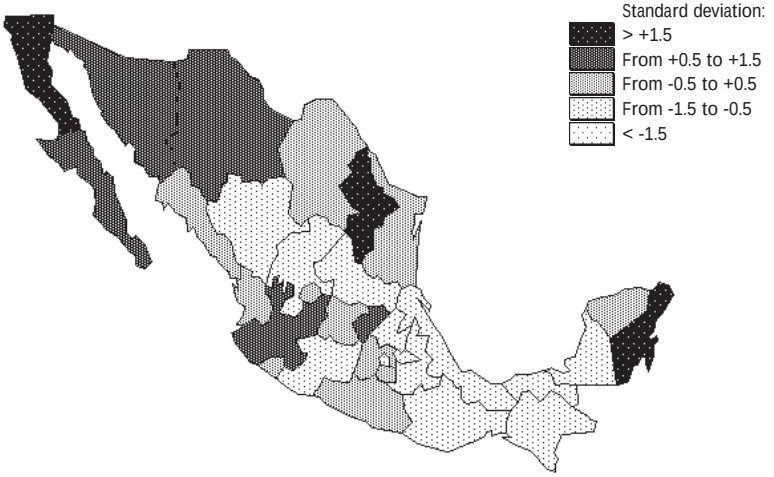
The wide disparities in development between regions would therefore seem to result not so much from differences in economic efficiency as from an uneven geographical distribution of activities. This would be a fairly satisfactory finding from the standpoint of concern over inter-regional disparities, but rather disquieting for Mexico as a whole, which on analysis appears relatively homogeneous territorially as regards labour productivity and hence economic performance.

Small disparities in industrial performance

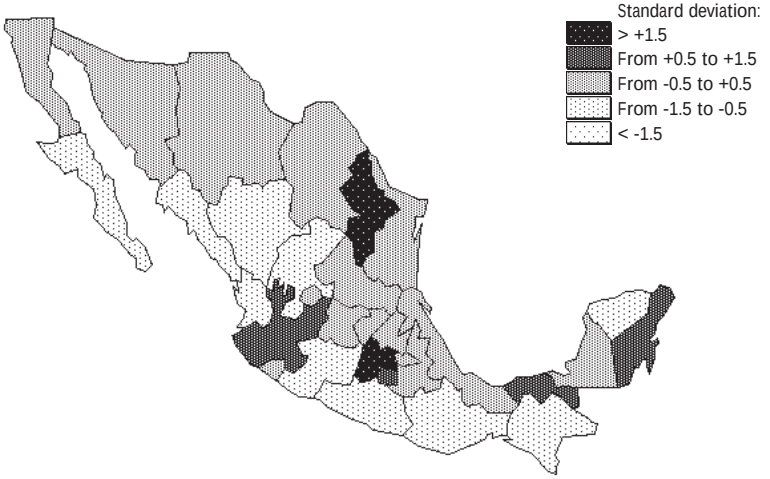
The same observation largely holds good for the two biggest industrial sectors after petrochemicals, namely capital goods (including mechanical engineering and motor vehicles) and food products. These two sectors account for 40 per cent of the value of total manufacturing output. With the exception of Mexico State, where output per employee is 50 per cent above the national average,[15]

◆ Maps 6 and 7. ***Labour force participation and mean wage by state, 1993***
(Mexico = 100)

Map 6. ***Participation rate, all sectors***



Map 7. ***Mean wage***



Note: The participation rate is the ratio of employees in the private non-farm sectors to the total labour force (labour force data are available for 1990 only).
Source: INEGI.

the other six Mexican states where the indices of localisation and output per employee are over 100 have productivity levels only slightly, if at all, above the mean (Quintana Roo: 125; Coahuila: 120; Aguascalientes: 115; Distrito Federal: 114; Sonora: 109; and Nuevo León: 100). This finding is corroborated by analysis of mean wages: this indicator of labour productivity reveals only a narrow range of disparity, particularly in the industrial sector (see Table 5 and the comprehensive Table 8 at the end of this section).

Table 5. **Sectoral specialisation of states, 1993**

Mean wage and coefficient of localisation in the four main productive sectors
(States with wage and localisation indices of over 100)

	Mining, oil			Commerce	
	Mean wage	Coeff. loc.		Mean wage	Coeff. loc.
Tabasco	181	544	Distrito Federal	147	180
Tamaulipas	169	148	Nuevo Leon	104	149
Baja California Sur	150	406	Jalisco	104	114
Veracruz	126	186	Baja California	102	138
Campeche	115	1 120	Mexico	100	100
Colima	113	303	Max./min.	3	4
Mexico	100	100	Coef. variation	0.22	0.34
Max./min.	9	122			
Coef. variation	0.53	1.35			
	Industry			Services	
	Aver. Sal.	Coeff. loc.		Mean wage	Coeff. loc.
Mexico (State)	129	112	Distrito Federal	273	239
Queretaro	120	163	Nuevo Leon	191	147
Distrito Federal	116	132	Baja California	177	129
Nuevo Leon	114	194	Colima	172	126
Coahuila	104	164	Tamaulipas	152	112
Jalisco	100	103	Coahuila	148	117
Mexico	100	100	Chihuahua	143	103
Max./min.	3	12	Campeche	142	107
Coef. variation	0.28	0.62	Sonora	136	100
			Quintana Roo	134	305
			Baja California Sur	130	176
			Aguascalientes	120	118
			Queretaro	115	104
			Durango	137	100
			Mexico	100	100
			Max./min.	3	18
			Coef. variation	0.26	0.56

Note: The coefficient of localisation is the ratio: (sector employees in the state/state labour force)/(sector employees in Mexico/national labour force).
Source: INEGI.

Thus in the main manufacturing industries, too, one does not find the differences in economic performance that might be expected in a country with such wide territorial disparities in economic, social and urban development (see Map 8 and 9).

Regional economic differences that are more quantitative than structural

The results of this analysis therefore suggest that income disparities between states are due not so much to differences in the specific performance of regions as to the extent of their entry into the modern economy. The most modern and developed regions do not show up as distinctly more efficient than the others, contrary to what might be expected in a country where the situations of the regional economies appear at first sight to be so different. This would mean that utilisation of the factors of production – excluding oil and petrochemicals – does not differ significantly from one region to another.

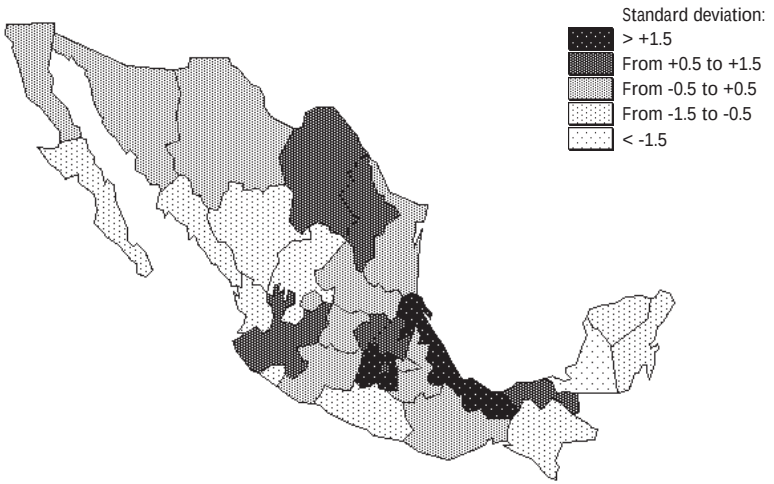
The advantages of concentration of human resources and activities appear untapped as yet for want of effective local management, both in the case of infrastructures and in that of congestion. The most obvious example is the central zone of Mexico City, where the benefits of urban concentration seem barely to outweigh the costs. Moreover, the small disparities in average earnings in the non-oil sectors – which admittedly reflect the rigidity of the Mexican constitutional trade union system that prevailed until 1995, when the system of centralised wage bargaining between government and unions began to be discarded – are evidence of a generally low level of labour skills in those sectors, regardless of the level of development of states. It could be asserted, at the risk of shocking the reader, that current productivity differentials between Mexican regions are not wide enough and reveal not so much a balanced development of the productive system as inadequate exploitation of the advantages of the advanced regions. The present productivity of the country's most developed regions appears to be far short of their potential, which could be realised through an enhancement of the advantages of their concentration, both as regards human resource training and in the management of the more generic resources of enterprises (local public policies, development and management of infrastructures, etc.).

This structural homogeneity, which differentiates Mexico's territorial development problems from those of most other OECD countries, has important implications for the types of development policy adopted. Policies should probably aim at raising the low performances of Mexico's most developed regions (essentially by way of improved public management in all areas), since these regions lead the country's economic development. In Mexico this latter type of policy

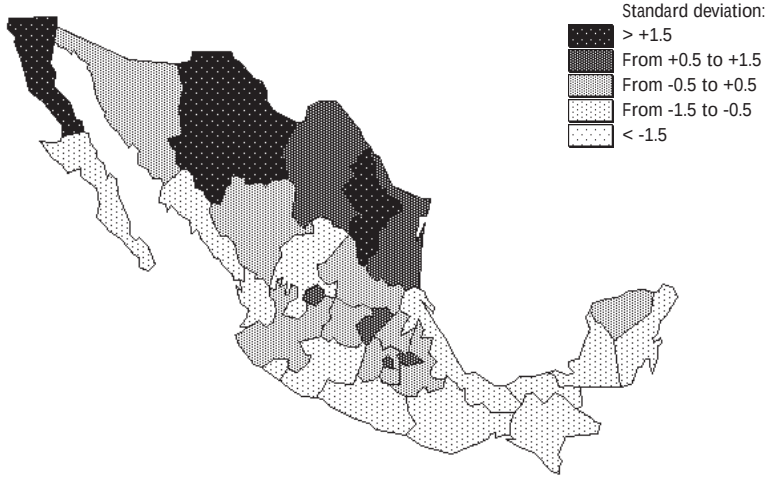
◆ Maps 8 and 9. ***Mean wage and coefficient of localisation of the "manufacturing sector", 1993***

(Mexico = 100)

Map 8. ***Mean wage***



Map 9. ***Coefficient of localisation***



Note: The coefficient of localisation is equal to the ratio of the share of industrial employees in the state's labour force to the share of industrial employees in the national labour force (labour force data are for 1990).

Source: INEGI.

would be thwarted anyway, because of the narrow mean wage spread which ultimately works against the least developed regions, given that these do not hold a net comparative advantage in labour costs.

Numerous studies carried out on OECD countries show that differences in regional economic development essentially reflect differences in productivity and sectoral structure between regions. In fact, the most spatially concentrated regions are also the most productive, since they have large skilled-labour markets in which supply and demand are better adjusted, and since they utilise economies of scale in infrastructure spending in order to achieve maximum overhead investment, at lesser cost, and to limit the negative effects of concentration (congestion, pollution). In this regard, migration from rural to urban areas or from the poorest to the richest regions has acted, in most countries, as a very powerful stimulus to national productivity gains, with labour moving from low-productivity areas and occupational sectors to high-productivity ones. There is no evidence that this mechanism is operating in Mexico, at least as regards occupational and geographical mobility in the non-farm formal sector. It is symptomatic, moreover, that many studies stress the low inter-regional mobility of labour in Mexico, in contrast to its high international mobility.

The fact that Mexico has now attained a level of technological development which enables it to receive numerous types of industry, attracted by the low labour costs, does not guarantee that it will automatically reach the level of organisational development (quality and reliability of relations between the different productive operations, capacity to adjust, logistics, etc.) which is increasingly sought by mobile productive capital.[16]

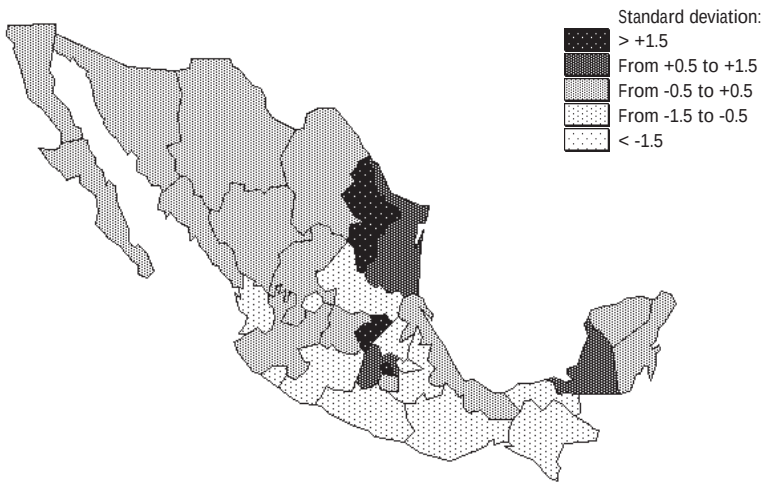
The most developed regions in the industrial countries have a specific role to play. These areas are ''incubators'' of activity, offering innovative industries all the resources they need in terms of business services and expertise. Again this does not seem to be the case in the main industrial regions of Mexico. For example, one is struck by the weakness of the ''business services'' sector (Maps 10 and 11) in the Mexican regions. The coefficient of disparity (standard deviation/mean) of the coefficient of localisation of these business service activities is very high (1.03), whereas the mean wage disparities are low (0.24), which suggests an overall weakness in this sector, including in the few states where it is very concentrated. As can be seen from Maps 10 and 11, only the Distrito Federal, Nuevo León and Campeche have both a concentration of business service employment and an average wage significantly above the mean.

Recent trends of economic disparities in Mexico: a turnaround

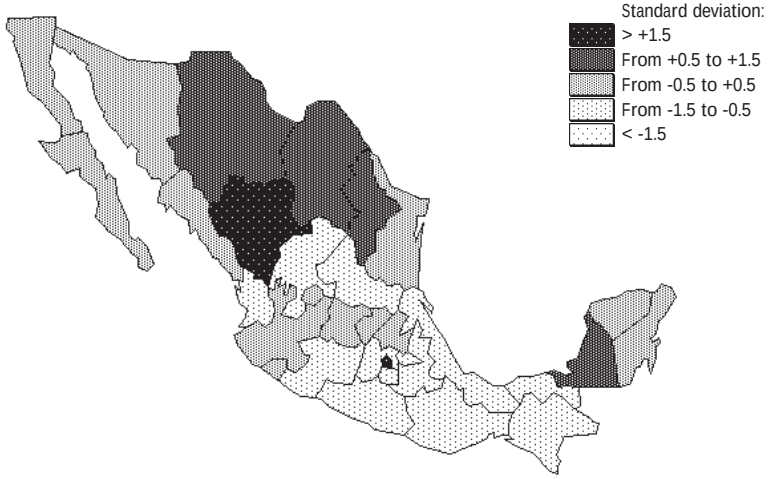
In order to analyse the trend of inter-regional economic disparities in Mexico it is necessary to look at the trend of per capita GDP in the different states. As

◆ Maps 10 and 11. ***Mean wage and coefficient of localisation business services, 1993***
(Mexico = 100)

Map 10. ***Mean wage***



Map 11. ***Coefficient of localisation***



Note: The coefficient of localisation is equal to the ratio of "business service" employees in the state's labour force to the share of "business service" employees in the national labour force (labour force data are for 1990).
Source: INEGI.

stressed earlier, the use of oil-inclusive statistics of regional GDP to measure interstate disparities can create an illusion as to the "modern" economic development of the country. It is therefore proposed to study also the trend of disparities in interstate product, excluding the "oil and mining" sector.

A recent IMF study (1996)[17] shows that Mexico's regional disparities narrowed during the period 1970-85 and widened again in the period 1985-93. Our analysis, made with the data available for the two periods 1980-85 and 1985-93), leads to the same finding.

In order to provide a clearer geographical picture, the states have been divided into five categories of per capita GDP (defined in multiples of the standard deviation of states' per capita GDP) and per capita GDP exclusive of "oil and mining". The data presented in Table 6 and Figure 3 confirm that disparities narrowed distinctly in 1980-85 and widened again in 1985-93, whether in terms of total per capita GDP or per capita GDP less oil and mining. In 1993, moreover, Mexico was back to exactly the same level of disparity, in both measures, as in 1980! For total per capita GDP, the unweighted coefficient of variation was 0.57 in 1980, 0.47 in 1985 and 0.57 in 1993. Excluding oil and mining, the values were respectively 0.69, 0.55 and 0.68.

Table 6. **Disparities in real growth of GDP of the states (total 1980-85 and 1985-93)**

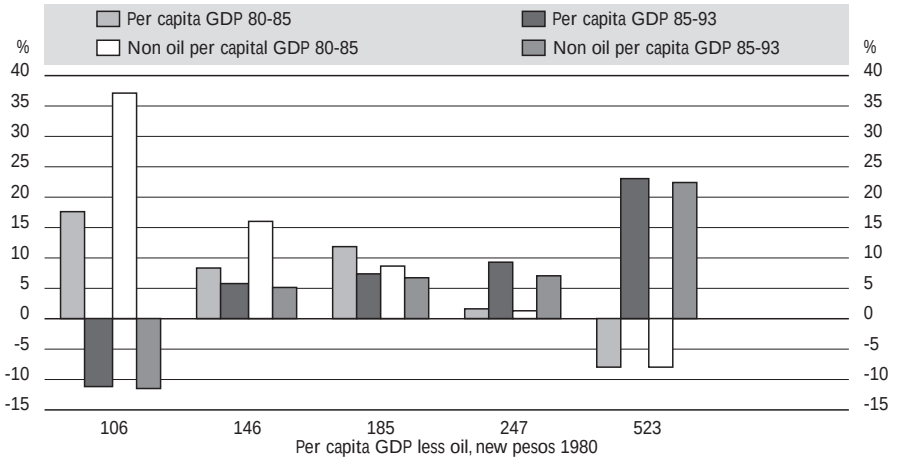
(New pesos, 1980)

	Per capita GDP	Change in per capita GDP %		Per capita GDP	Change in per capita GDP %	
	1980	1980-85	1985-93	Less oil, 1980	1980-85	1985-93
–1 standard deviation[1]	106	17.7	–11.3	89	37.1	–11.7
Between –1 and –½						
Standard deviation[2]	146	8.2	5.5	129	16.2	5.2
Between –½ and +½						
Standard deviation[3]	185	12.0	7.2	182	8.4	6.8
Between +½ and +1						
Standard deviation[4]	247	1.6	9.4	244	1.2	6.9
+1 standard deviation[5]	523	–8.1	23.2	522	–8.1	22.6
México	259	2.9	10.6	222	3.0	9.9

1. Chiapas, Oaxaca.
2. Guanajato, Guerrero, Hidalgo, Michoacán, San Luis Potosí, Tabasco, Tlaxcala, Zacatecas, Aguascalientes, California Sur, Campeche, Colima, Chihuahua, Durango, Mexico State, Morelos, Nayarit, Puebla.
3. Querétaro, Quintana Roo, Sinaloa, Veracruz, Yucatán.
4. Baja California, Coahuila, Jalisco, Sonora, Tamaulipas.
5. Federal District, Nuevo León.

Source: INEGI.

◆ Figure 3. ***Disparities in real growth of state GDP***
Classified into five groups of GDP per capita for 1980, 1980-85, 1985-93



Source: INEGI.

These data suggest that the period following 1985 saw a complete and spectacular turnabout by the mechanisms of territorial development. During the first period, growth of the least developed regions was distinctly stronger than that of the most developed. During the second, the reverse was the case. According to the authors of the IMF study, this would constitute evidence of the relationship between economic growth/recession and territorial disparities. They find that in the high-growth period of 1970-85 disparities narrowed, whereas in the subsequent low-growth period of 1985-93 they widened. This relationship between growth rate and disparities, which has been the subject of much literature and considerable controversy in the industrial countries, is worth discussing for at least three reasons.

– Empirically, because our analysis of two different periods, 1980-85 and 1985-93, reverses the proposition: the first period, when disparities narrowed most, was the period of weakest growth, whereas exactly the opposite was true of the second period (despite the recession of 1986) (see Table 6).

– For geographical reasons which have only an indirect bearing on economic growth: a large part of the reduction in disparities can be attributed to a paradoxical effect linked with the geographical concentration of Mexico's

economy: a number of states close to Mexico City, which were poor at the outset, like Aguascalientes, Guanajuato, Hidalgo, Morelos, Tlaxcala and Mexico State itself, developed rapidly for no other reason than the central zone's expansion. Paradoxically, the concentration of populations and activities in the country's central zone – which has only an indirect link with Mexico's growth performances – has at one and the same time been a mechanism of territorial imbalance in favour of the centre and, through the centre's expansion, a means of development for numerous poor central states.

– The third reason is of a structural nature: the phenomena which have weighed most on regional economies in past years, and which account for the observed upsets in territorial development logic, are probably linked with the structural adjustment which the country underwent in the second half of the 1980s, and notably the liberalisation of its economy. A number of reports by the Working Party on Regional Development Policies[18] have addressed this question of the turnaround in regional development trends apparent in most Member countries and have identified a general mechanism at work in the industrial countries during the recent period: today's ''adjusted growth'', is associated with more territorial disparities. A Taylorist system of production, in which the comparative advantages of regions were low wages, is being replaced by a system subjected to the need for continuous adjustment, more dependent on product and process innovation, and founded on quality and abundance of the regional resources available to enterprises (skilled labour, broad labour market, infrastructures, suppliers and sub-contractors, etc.). This is what the Working Party has termed the structural growth of inter-regional inequalities. By contrast, steep recessions, because they primarily affect the regions that are most productive and most present in world markets, now have a cyclical effect of reducing inter-regional economic disparities.

In the case of Mexico, which presents some similarities to that of a country in transition, there is reason to think that the increasing substitution of free-market practice for public sector activity and regulatory rigidities, and notably the privatisation of whole sectors of the economy (employment in public enterprises has been reduced by one-half in the space of a few years), the surge in foreign productive investment, and the establishment of NAFTA, among other things, have opened up new development prospects for some of the country's regions. It is the richest regions that now appear to derive most benefit from economic growth, especially those geographically close to the great North American market (the border zone).

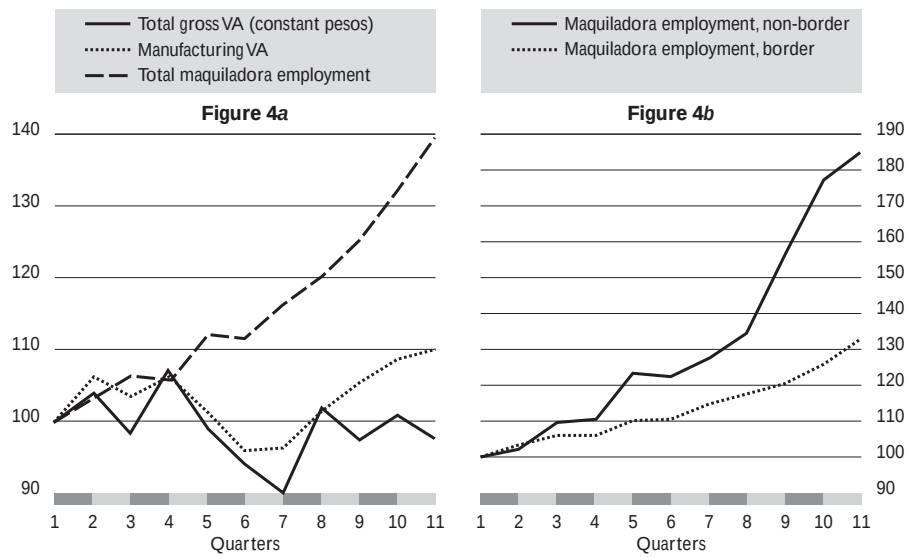
It is necessary, however, to stress again the narrowness of productivity and labour cost differentials across the country, which sets Mexico's regional problems

apart from those of most other Member countries and suggests that although Mexico's development is being led by the richest regions, this is due mainly to *i)* the quantities and densities, rather than quality, of factors of production present in the most dynamic states (and even more the cities) and *ii)* their geographical location, the country's central zone and northern border area being the regions best able to enter the international markets. Moreover it is the traditional *maquiladora*[19] industry zones which now benefit most from industry location within the NAFTA framework.

Regional impact of the monetary crisis of 1994

The shock that occurred in December 1994 affected the regions unevenly. Since no figures for states' GDP in 1994, 1995 and 1996 are available, it is difficult to gauge the shock's impact on regional economies. On the other hand, given the sectoral composition of states' value added in 1993 and the quarterly movements

◆ Figure 4. ***Economic recession and recovery in 1995 and 1996***
Total value added, manufacturing value added, maquiladora employment
Quarterly data (1994 Q1 to 1996 Q3)

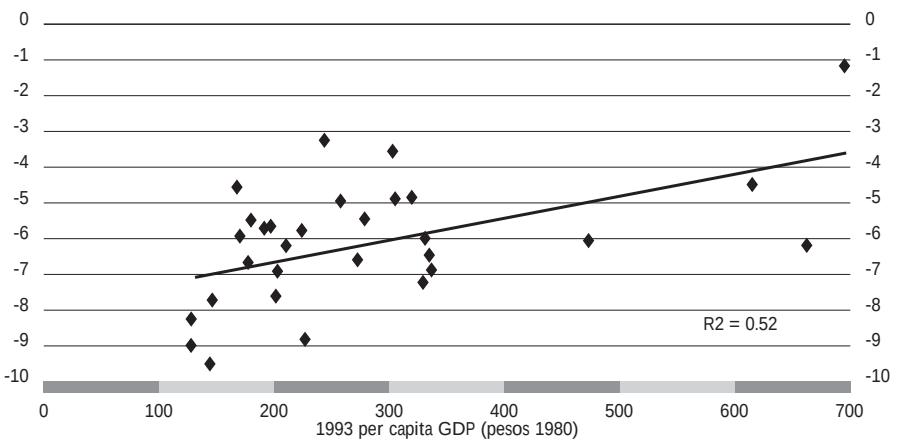


Note: The border states are Baja California, Sonora, Chihuahua, Coahuila and Tamaulipas.
Source: INEGI.

in sectoral value added between January 1994 and September 1996, it is possible to calculate a quarter-by-quarter "structural growth" of states' value added during the latter period: the growth path shows a marked recovery in 1996 from the steep recession in 1995. Figure 5 gives the results of this calculation. It emerges that the richest states (in terms of per capita GDP) ultimately suffered least from the economic shock (which, in terms of real national growth, was –2 per cent over the 11 quarters).[20]

In Figure 4*a* and *b* it can be seen that *i)* the industrial sector suffered least from the recession and, more importantly, *ii)* that it recovered earlier and more rapidly than the rest of activity, the reason being that the currency crisis restored to industry the cost advantages it had lost over previous years as a result of the peso's increasing overvaluation. Manufacturing employment in the *maquiladoras* grew almost uninterruptedly during these three years, and much more rapidly than value added. In the northern border zone it rose by 30 per cent; in the other states – essentially in the central part of the country – where its presence is admittedly very small, it more than doubled. These figures suggest that the 1995 recession had only a small impact on the export-oriented manufacturing industries, which are located in the country's most developed regions. In fact,

Figure 5. ***Structural growth of Mexican states between January 1994 and September 1996***[1]



1. Structural growth is calculated for each state by applying the national quarterly changes in specific sectors to their performance at state level (state level performances are known up to 1993, and national level performances were observed from January 1994 to September 1996).

Source: INEGI.

the peso devaluation had the effect of stimulating this category of activity even more.

The economic shock experienced by Mexico thus tended to increase regional development differentials which, as seen earlier, were widening structurally. The states most involved in export activity were those that weathered the 1995 recession best.

REGIONAL COMPETITIVENESS

The ten poorest states in Mexico are still heavily dependent on a sluggish agricultural economy (over 33 per cent of the agricultural labour force). The ejidos system – redistribution of land to the peasants by the federal government – which dated back to the Revolution and was only modified in 1992, has led to excessive fragmentation of agricultural land and persistently low productivity. Article 27 of the Constitution, which related to ejidos was amended in 1992 so as to transform the communal ejidos land tenancy form to private property. However, it will surely be many years before this new legislation produces a significant effect on the efficiency of the country's agricultural economy.

Labour force skills

Today the level of labour force skills and infrastructure quality are the most important factors of comparative advantage in the regions of industrial countries. In Mexico we have seen that labour costs differ little between regions, which would suggest narrow differentials in labour force skills, the most developed regions being distinguishable more by the quantity than by the quality of their labour. On a more analytical level, the location of the most highly skilled occupations is significant. It is in the North and the central zone, and more specifically around the major cities, that the highest skill concentrations are to be found (Table 7). With 38 per cent of Mexico's employed labour force, the central zone (the Distrito Federal and the six surrounding states) has 48 per cent of the nation's engineers, 42 per cent of its technicians and 48 per cent of its university teachers. The border states have a low concentration of skilled labour, which would corroborate the arguments developed above (only 20 per cent of Mexico's engineers and technicians in a zone employing 18 per cent of the national labour force). The three other main regions (the Gulf, the Centre-North and especially the South-West) are well below the average.

The engineer and technician categories reveal a marked contrast according to whether they are considered as a proportion of a state's total labour force or as part of wage employment in the private formal sector only. What differentiates the Mexican states is not so much their types of activity (more or less skilled-labour-

Table 7. **Labour force skills in Mexico's main regions**

Percentage of certain categories of workers in the employed national labour force, 1990

	All workers	Engineers	Technicians	Professional occupations
North	18	21	20	19
Centre	35	48	42	48
South-west	14	6	9	7
Gulf	12	9	11	7
Centre-North	15	12	13	13

Notes: North – Baja California, Sonora, Chihuahua, Coahuila, Nuevo León and Tamaulipas.
Centre: Distrito Federal, Mexico, Morelos, Hidalgo, Querétaro, Puebla and Tlaxcala.
South-West: Chiapas, Oaxaca, Guerrero, Michoacán and Colima.
Gulf: Quintana Roo, Yucatán, Campeche, Tabasco and Veracruz.
Centre-North: Zacatecas, Aguascalientes, San Luis Potosí, Guanajuata and Jalisco.
Source: INEGI.

intensive) as their degree of integration in the modern formal economy. Maps 12 to 15 are good illustrations of the Mexican paradox that the enterprises employing the most engineers and technicians are in the South, which has few enterprises (but is also the location of the oil and petrochemicals sectors, which employ a comparatively high proportion of engineers and technicians), while In the North, where most of the country's industrial employees are to be found, there is no significant concentration of technicians and engineers.

Infrastructures[21]

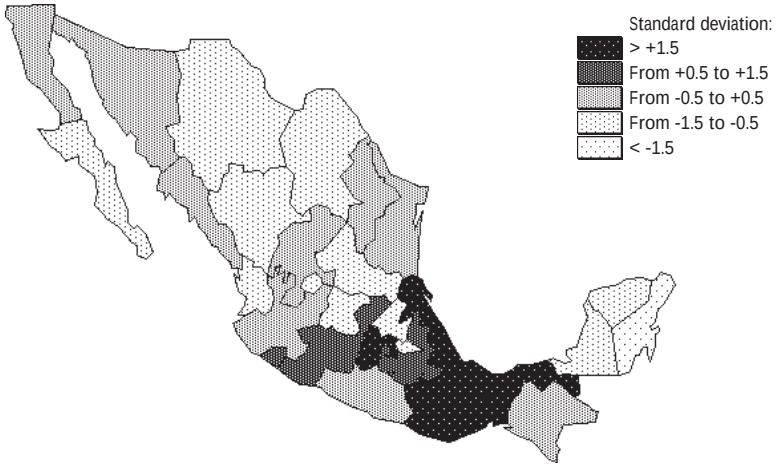
As regards to infrastructure, with on average, according to the World Bank,[22] 66 telephone lines per 1 000 inhabitants (in 1988) and 820 km of paved roads per million inhabitants (in 1990), *i.e.*, respectively 9 and 18 times less than in the United States, Mexico has considerable leeway to make up. Here again there are big differences between states, and these have widened the economic disparities. For example, the number of telephone lines per inhabitant varies from one to ten between the Distrito Federal and Chiapas proportionately to the states' per capita GDP. In the section devoted to privatisation of infrastructures, it will be seen that Mexico has made considerable progress in these areas as a result of the measures taken in the early 1990s.

Between 1980 and 1990, transport infrastructures were largely neglected: corresponding investment expenditures in the federal budget shrank throughout the 1980s, on average by 10 per cent annually between 1982 and 1990 (in fact a little less slowly than overall state investment expenditures, which fell 12 per cent annually over the period because of government budget difficulties, notably as

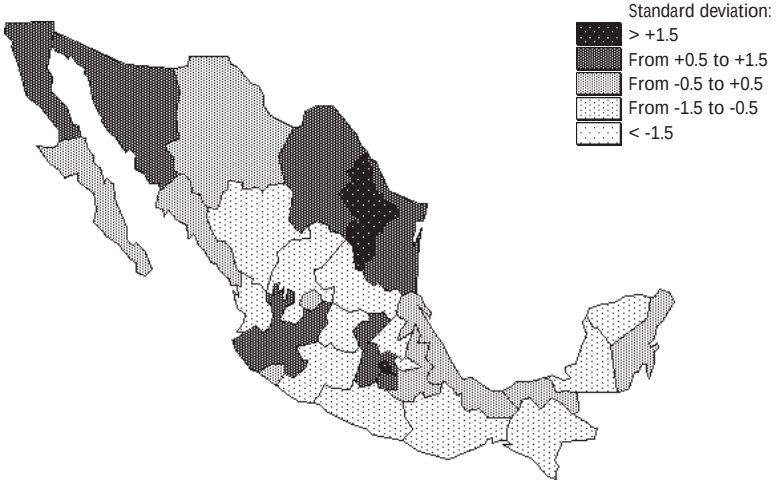
◆ Maps 12 and 13. ***Proportion of engineers in salaried employment and in the total labour force, 1990***

(Mexico = 100)

Map 12. ***In salaried employment***



Map 13. ***In the total labour force***

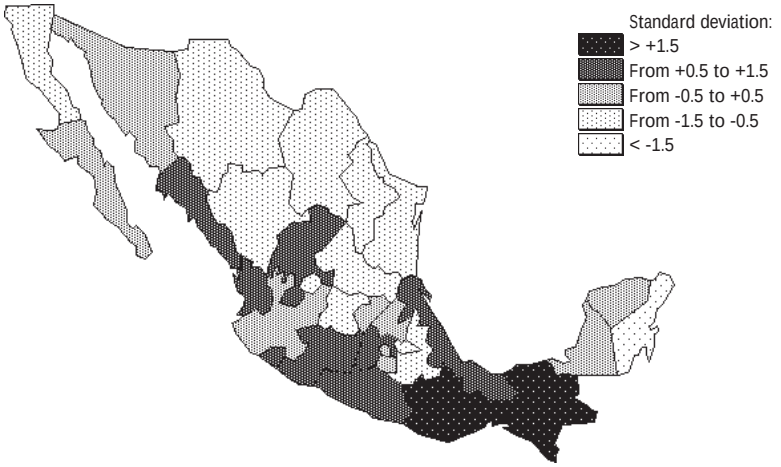


Source: INEGI.

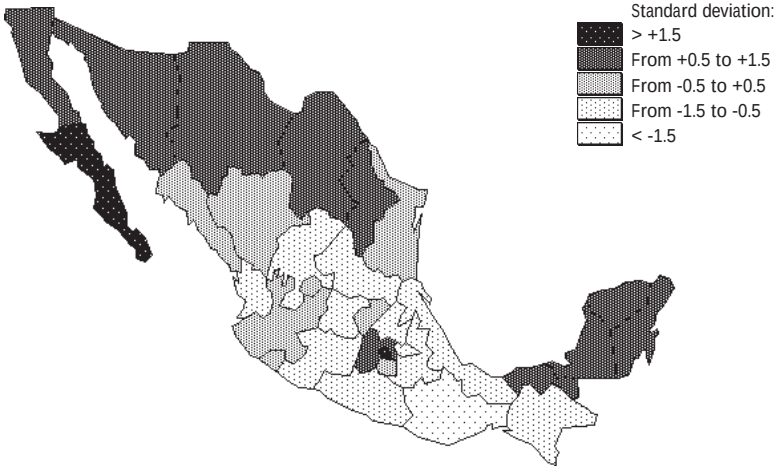
◆ Maps 14 and 15. ***Proportion of technicians in salaried employment and in the total labour force, 1990***

(Mexico = 100)

Map 14. ***In salaried employment***



Map 15. ***In the total labour force***



Source: INEGI.

regards the debt burden). During the same period, the road network (87 000 km of paved roads, according to INEGI) was modernised very little (only 7 000 km of four-lane roads and 1 000 km of motorway) and badly maintained. Further, certain strategic road links, particularly from east to west, do not yet exist. The 27 000 km rail network is antiquated and the large maritime ports still needed to be completely overhauled at the beginning of the 1990s. It is the air traffic facilities which seem to be in the best condition, with 80 airports of which 42 are international. If, as suggested by more and more economic studies (particularly within the Working Party), quality and availability of infrastructures are key conditions for national and regional economic development, it is clear that these conditions were not or were only partially met in Mexico at the beginning of the 1990s. This has contributed to further concentration of production and growth in the best equipped zones, and especially the cities (at the same time no significant policies have been put in place to manage this concentration and control urban congestion).

The second determinant of regional economic success seems to be proximity to the North American market. Well before conclusion of the GATT and NAFTA agreements, the country's northern zones were favoured by the nearness of the American economy. The *maquila* system, which allowed American companies to locate assembly plants in the border zone to take advantage of low Mexican labour costs and exemptions from import and export taxes, was a powerful factor behind the development of these regions. Map 16 and its accompanying table show that this inflow of activity was clearly significant for the states concerned. More than 20 per cent of employed persons in Baja California and Chihuahua, and 15 per cent in Tamaulipas, depend on these industrial plants. Even though in most cases this involves low-skilled industrial work (60 per cent of *maquiladora* employees are women), this system has allowed the northern regions to undergo industrialisation which could conceivably pave the way for autonomous industrial development (as is becoming the case in Monterrey, an old industrial centre). The signing of the NAFTA has constituted a *de facto* extension of the *maquila* system to the whole country – and Figure 4b suggests that this mechanism is already at work – through the liberalisation of trade and the lowering of tariffs. However, it seems likely that the geographical consideration, of proximity to the border and the poor quality of infrastructure further into the country, will reserve this economic advantage for the country's northern zone far into the future (even though some states close to large ports will be able to benefit to a degree from Mexico's low labour costs.

To conclude this section it can be said that the main imbalances in Mexico are not basically territorial: the acute social problems connected with extreme poverty affect the whole country, though they are even more intense in certain particularly disadvantaged regions. A pattern of economic development based largely on comparative advantage linked to low labour costs is spread unevenly over the country,

◆ Map 16. ***Employment in maquiladoras within Mexican states, 1994***
Employment in per cent/actual figures by state given in table
(Mexico = 100)

Employed persons working in the maquiladoras, 1994

Chihuahua	178 569
Baja California	118 652
Tamaulipas	105 093
Caoahuila	51 235
Sonora	47 027
Oaxaca	23 568
Mexico and DF	9 252
Guanajuato	9 061
Yucatán	5 661
Michoacán	3 987
Baja California Sur	893
Other states	26 366
Mexico	579 366

Source: INEGI.

primarily benefiting the central zone, the US border zone and a few big cities. The main territorial inequalities stem from the uneven spread of this development pattern and not from its differentiation between regions (as shown by the data on productivity, wages and labour force skills in the Mexican states).

This explains why the question of Mexico's economic and social development is primarily one of social policy and structural policies. These policies inevitably have regional dimensions. First, it is necessary to help the poorest populations, particularly in the least developed states, to attain essential living and income standards by way of federal policies to stimulate activity (low-tech activities, economic organisation of communities, crafts, tourism, environmental protection, etc.) and through provision of basic public services (education, health care, etc.), so that ultimately, *i.e.* in the medium or long term, they will be able to grasp the opportunities of modern development, especially in sectors seeking low labour costs. Second, it is necessary to promote improvement of the environment and of the quality of economic development in the regions which are currently the most developed but which clearly are not making full use of their technical and territorial assets. The requirements for achieving this improvement in the performances and structural economies of the more developed regions are: better local public management, privatisation of certain underdeveloped public

Table 8. **Sectoral specialisation of states**

Indices of mean wages and coefficient of localisation in the four main productive sectors, 1993
(Mexico = 100)

	Mining, oil		Industry		Commerce		Services		Per capita GDP
	Mean. wage	Localisation coefficient	Mean. wage	Localisation coefficient	Mean. wage	Localisation coefficient	Mean. wage	Localisation coefficient	Index
Aguascalientes	38	20	84	168	79	124	120	118	95
Baja California	77	9	82	493	102	138	177	129	106
Baja California Sur	150	406	51	60	81	146	130	176	112
Campeche	115	1 120	48	37	66	92	142	107	338
Chihuahua	86	139	77	224	90	107	143	103	99
Chiapas	122	93	67	16	58	54	113	39	43
Coahuila	86	469	104	164	72	122	148	117	123
Colima	113	303	70	31	67	107	172	126	113
District Federal	68	3	116	132	147	180	273	239	252
Durango	57	169	58	106	67	82	137	100	72
Guerrero	44	57	51	18	78	61	131	85	59
Guanajuato	70	63	77	109	77	92	137	75	68
Hidalgo	69	221	103	81	73	51	117	51	68
Jalisco	83	27	100	103	104	74	170	97	100
México	56	23	129	112	116	67	194	52	83
Michoacán	120	31	75	39	73	64	115	60	50
Morelos	45	32	121	77	85	88	140	98	106
Navarit	43	34	56	40	74	70	191	61	68
Nuevo León	79	66	114	194	104	149	191	147	168
Oaxaca	23	36	90	24	70	41	117	39	42
Puebla	34	46	81	91	80	71	253	57	62
Querétaro	47	45	120	163	93	97	115	104	107
Quintana Roo	52	41	61	30	83	159	134	305	203
Sinaloa	45	43	72	41	82	110	179	90	77
San Luis Potosí	55	113	93	90	71	84	158	66	73
Sonora	92	265	80	114	86	134	136	100	123
Tabasco	181	544	112	30	73	93	123	62	88
Tamaulipas	169	148	86	164	77	115	152	112	89
Tlaxcala	21	34	88	121	81	40	122	33	57
Veracruz	126	186	122	41	70	68	155	58	65
Yucatán	42	70	55	74	73	118	118	97	75
Zacatecas	63	385	50	30	62	70	121	45	51
México	100	100	100	100	100	100	100	100	100
In new pesos	33 503		24 720		20 583		12 795		
Max./min.	9	367	3	14	3	5	2	9	8
Coeff. variation	0.53	1.38	0.29	0.65	0.21	0.36	0.25	0.58	0.62

Source: INEGI.

services that were poorly managed in the past, better diffusion of technology and, more generally, construction of a territorial and, especially, urban environment that will support and sustain the development of those regions' productivity and economic efficiency. It can be said, in agreement with authors like Pierre Veltz (1996), that the economic future of emerging countries like Mexico will depend on the development of both a technical capacity, *i.e.*, industrial know-how, and an organisational capacity, such as to ensure a reliably efficient linkage of the different components of productive activity (logistics, soundness of infrastructures, capacity for rapid adjustment).

ENVIRONMENTAL ISSUES

Mexico's industrial development and its territorial pattern are posing serious problems as regards deterioration of the natural environment. These problems essentially fall into three main categories: soil, water and air.

Soil. Broadly speaking, no more than 20 per cent of the solid waste produced by households (73 000 tonnes daily) and industry (370 000 tonnes daily) is treated. The metropolitan zone of the Valley of Mexico City, which has a population of 20 million and produces 30 per cent of Mexican GDP, and the border zone are the two regions most seriously affected by the problems of soil pollution by solid waste. In Mexico City the domestic and industrial waste collected is sorted by 20 000 informal workers before being deposited in one of three controlled landfills. For the whole conurbation there are only three composting treatment units and one incinerator. A very large part of the waste is dumped directly in vacant lots, around factories or in clandestine tips. The border zone receives, in addition, a large amount of waste from the USA which is deposited along the 3 200 km border; the Ministry of Environment, National Resources and Fishing (SEMARNAP) , which is in charge of the environment, is unable to state the exact quantity of this waste.

A bilateral US-Mexico plan, the Plan Integral Ambiental Fronterizo (PIAF), should make it possible to combat the disastrous environmental effects of waste flows from the *maquiladora* industries. The establishment in 1994 of a North American development bank to assist environmental protection is now making it possible to finance public and private schemes to improve environmental quality in the border zone. The World Bank and the Inter-American Development Bank have opened lines of credit for environmental projects in Mexico.

More generally speaking, Mexico's federal government decided in 1994 to create 16 landfills for toxic waste, which should meet a large share of the country's needs (estimated at 20 landfills by the Ministry for Social Development).

Treatment of waste water, domestic and industrial, is still on a very small scale in Mexico. It is estimated that 80 per cent of waste water is not treated and

that, in very many cases, farmers irrigate their crops with waste water carrying all sorts of harmful substances (chromium, cyanide, mercury, etc.). Most of today 's big cities have sewerage systems inadequate for the needs of their populations. Discharges of industrial waste water pose almost as many problems, particularly in the highly industrialised areas of the border zone: of the nearly 2 000 *maquiladora* industries in that region, more than a thousand consume, process or produce toxic materials (solvents, oils, plastics, acids, etc.) which are discharged untreated into watercourses. The principal rivers of the North – Rio Bravo, Rio Nuovo and Rio Colorado – carry these toxic substances down to the sea, causing serious problems for the hundreds of villages that live off the natural resources of the shore and the sea. There have, however, been a few transborder initiatives designed to remedy the situation: in 1994, for example, the US Congress approved a credit for the construction of a bi-national purification plant for the San Diego-Tijuana zone.

The water problem, which is still considerable in a country where nearly 30 per cent of the population have no piped drinking water in their dwellings, has a number of features specific to Mexico. First and foremost is the fact that the principal sources of supply are in the south, while the main concentrations of population and activity are in the centre and north. The situation in Mexico City is particularly serious, since excessive pumping of ground water has caused a general subsidence of the nation's capital, built on the site of an ancient lake. Furthermore, the earthquake of 1985 fissured the waste water conduits, which polluted the ground water. As a result, it has become even more necessary to obtain water from increasingly distant sources. The widening distance between the site of pumping and the site of water consumption has greatly increased supply costs at a time when, with water regarded as a constitutional right, collection of charges is proving difficult inasmuch as it is practically impossible for the authorities to cut off the water supply of users who do not pay their bills. It is therefore not surprising to find that the average water consumption per inhabitant of Mexico City is double that of European cities (even when a proportion of the city's dwellings have no running water!). This is an example of a socially regressive effect observed in many cities of Central and South America: virtually free or *de facto* free water benefits the better-equipped, more solvent households and, since costs are not met, hampers the equipment and supply of the most deprived households.

Legislation enacted in 1992 opened up the way for major reforms in water management, with the creation of catchment area agencies and the possibility of contracting out water distribution and treatment to the private sector. Concession contracts have now been established in cities like Aguascalientes, Naucalpan, Cancún, Puebla and Mexico City. Privatisation of the water sector seems to be developing rapidly and, in the next few years, should concern most of the fifty or so cities with populations of over 200 000.

Moreover, in rural areas (state of Morelos) and port areas (state of Veracruz), a comprehensive approach which includes environmental as well as rural development concerns is used. Policy action of the states aims at economic activity (micro-enterprises, use of biotechnology, training in commercial techniques...), education and health, and fight against poverty

Air pollution has reached alarming levels in most of the big cities and even more particularly in the urban zone of Mexico City.. The IMECA index (Indice Metropolitano de la Calidad del Aire) measures the concentration of pollutants CO_x, SO_x, NO_x and of ozone. In the metropolitan zone of Mexico City, in 1993, there were only 31 days when this index was lower than the index of maximum admissible concentration defined by the World Health Organisation. However, the Metropolitan Commission for Pollution Prevention and Control (CGPCCA), which takes pollution readings in Mexico City, states that air pollution levels have, if anything, been falling since 1991.

Air pollution in the metropolitan zone of Mexico City, which generates nearly 30 per cent of national GDP, is primarily attributable to motor traffic: approximately 30 million litres of motor fuel are consumed there daily and account for 75 per cent of the air pollutants. Natural conditions aggravate the situation, given that the city is walled in by mountains and that rainfall and wind-force are low.

The government has taken measures to limit emissions by introducing a plan of intervention at three levels:

Level 1: when the pollution index is between 2 and 3½ times higher than the WHO maximum admissible level: suspension of open-air recreational activities in schools, up to 40 per cent reduction of firms' activity, restricted use of official vehicles.

Level 2: when the index is between 3½ and 4½ times higher than the WHO limit, the *''hoy no circula''* order which normally requires private vehicles to stay off the road one day in the week is extended to two days, firms' activity is reduced by up to 75 per cent and all the cultural activities are suspended.

Level 3: when the index is more than 4½ times higher than the WHO limit all the potential polluting activities are suspended throughout the metropolitan zone of Mexico City.

The instruments of environmental intervention may be of different kinds: regulatory constraint, economic incentives, persuasive measures, voluntary agreements (see OECD, 1994[23]). Mexico, as has been seen, chiefly uses the first type of measure: direct regulatory constraint. But this relates to the pollution levels recorded and not to emission levels. The concern is with the general quality of the air rather than the origin of emissions, whereas an increasing number of countries are setting norms for admissible emission.

This latter type of measure, which is being used in a city like Athens, is in the short term the only one that can meet acutely critical situations with regard to pollution levels. However, it has major disadvantages in that it blankets the entire economy of the conurbation, regardless of economic utility/emission ratios,[24] and, perhaps most importantly, it does not encourage technical innovation. General collective constraints have no effect on individual behaviour patterns and do not encourage producers to look for ways to reduce their emission levels.

It is probable, moreover, that the setting of emission norms, particularly in the case of private vehicles, would pose – in addition to enforcement problems (administrative cost, corruption, etc.) – the problem of exclusion of a large segment of the poor population for whom the use of a vehicle is an economic necessity. In this regard, it is striking to note that Mexico's recent monetary crisis, which hit the poorest population segments particularly hard, had the direct effect of reducing motor traffic in the cities.

It would be interesting to determine the economic cost of pollution control but also, and perhaps more importantly, the cost of congestion in the nation's big cities, especially Mexico City (available studies on the costs of negative externalities related to motor traffic in the cities of industrial countries suggest that congestion costs are much greater even than pollution costs). In a subsequent part of this report, it will be seen that the most concentrated and most developed cities and regions are only very slightly more productive than the rest of Mexico. The external economies of aggregation, which provide a strong economic justification for the concentration of populations and activities, are very sensitive to the quality of urban management policies such as will make it possible to maximise positive externalities and reduce negative externalities. The latter seem to be seriously penalising the economy of Mexican cities. Congestion and pollution should be prevented by means of land use and infrastructure policies or a system of charges, rather than treated with specific measures once they have reached intolerable levels. In this regard it is likely that the answer to the question of air pollution, like that of other environmental damage, will ultimately lie in changes in local public policies as a whole, rather than in the costly short-term measures now being applied.

Beyond these sectoral measures, the Mexican Government has also developed a horizontal approach which concerns the sustainable development of small and medium sized towns. The 100 Cities Program *(Programa de 100 Ciudades),* is included in the National Program for Urban Development 1995-2000. The object of this programme is to support the sustainable growth of 116 cities of small and medium size where 32 million Mexicans live (more than half of the urban population in Mexico). This programme is financed through Chapter XX of the Federal Budget. The resources are used to adequate land tenancy for the provision of services in urban areas.

NOTES

1. Source: World Bank (1994), *World Bank Development Report*.

2. According to regional economists such as Perroux or Williamson, during the industrial development phase the most dynamic, energetic regions drive the country's economy. This automatically introduces a strong accentuation of disparities from the outset. Subsequently, the multiple effects of interregional diffusion of growth (gradual shift of production into regions with lower labour costs, the harmonising role of public funding whose importance grows with economic growth, development of transports and telecommunications infrastructures, etc.) lead to the distribution of production and income over the entire country, and in the end to a reduction in regional disparities.

3. This analysis is based on the regional classification developped by Musset (1995).

4. The economic ''central zone'' comprises apart from the Distrito Federal, the Mexican states of Morelos, Hidalgo, Querétaro, Puebla and Tlaxcala.

5. The northern border states from west to east are: Baja California, Sonora, Chihuahua, Coahuila, Nuevo León and Tamaulipas.

6. For a description of impacts of migration transfers on rural economy, see J.E. Taylor *Micro economy-wide models for migration and policy analysis: an application to rural Mexico*, Development Centre studies, OECD, 1995.

7. In Mexico, urban areas are those with 2 500 or more inhabitants according to INEGI.

8. *Informe Mensual sobre la Economía Mexicana*, Centro de Análisis e Investigación Económica. Año XI, No. 12, March 1994.

9. HERNANDEZ Laos (1990), ''Medición de la Intensidad de la Pobreza y de la Pobreza Extrema en México'', *Investigación Económica*, No. 191.

10. It is necessary to draw attention to the use of data. Mexico's statistical system is well diversified, but of unequal coverage across the country. It is for this reason that a large part of this study is concerned with modern productive sectors only (mining, manufacturing, commerce and services, exclusive of agriculture, the public sector and the informal sector as a whole). The conclusions drawn, although reflecting the overall reality of the country's territorial development, should be treated with caution.

11. State by state unemployment figures, although available, have not been included as they are based on statistical concepts that are too narrow, and thus were not considered meaningful.

12. The concept of output is distinct from that of product (sum of values added) inasmuch as output value includes intermediate consumption.

13. Coincident with the indicator of per capita GDP disparity shown earlier, as can be seen by comparing the state-by-state figures for output per employee with per capita GDP.

14. It should be remembered that this concerns pseudo apparent labour productivities, since it is output value and not value added which is related to wage employment. But analysis in terms of mean wages will lead to the same conclusions.

15. It is difficult, with the information available, to explain this figure which suggests a high level of productivity in Mexico State in sectors which are no more present there than in Mexico as a whole (coefficient of localisation: 101). This probably reflects a bias linked with the ''company headquarters'' effect (the wage index is high: 141) and/or an ''end of production line'' effect, which causes output value to be higher than what value added should be.

16. Regarding the new organisational aspects of production, see Pierre Veltz, Globalisation et réinvention du local, Paris, Presses Universitaires de France, 1996.

17. V.H. Juan Ramon and L.A. Rivera-Batiz, *Regional growth in Mexico: 1970-93*, IMF Working Paper No. WP/96/92, Washington, 1996.

18. See ''Regional Policy Developments in OECD countries'', OECD/GD(92)167, Paris, 1992.

19. The maquiladora is a longstanding system of free zones allowing foreign companies, chiefly US, to engage in manufacturing operations without having to pay customs duties on imports of components and exports of finished products.

20. This calculation rests on arguable assumptions, in particular a geographical homogeneity of sectoral performance (productivity, impact of the shock on the different sub-sectors): it was assumed that sector trends were the same in all states. Furthermore, it puts Mexico's overall structural growth at a level lower than the real growth recorded (in a more elaborate study this disadvantage could be corrected by iterative procedures so as to adjust, quarter by quarter and sector by sector, the calculated value added to the observed total value added for the country. It is likely, however, that the calculation tends to underestimate rather than overestimate the mechanism with which we are concerned: the object in question is the structural effect, therefore not including the individual performances of states, which were probably better in the most developed regions.

21. See also the OECD study ''*Territorial development, infrastructure in Mexico: a new public policy for development*''.

22. World Bank (1994), *World Development Report*.

23. OECD, 1994, Managing the Environment. The Role of Economic Instruments, Paris.

24. Although a recent measure now allows new vehicles equipped with catalytic converters to take the road every day.

SECTORAL POLICIES WITH A REGIONAL IMPACT

In Mexico, where issues of national economic development take precedence over those relating to inter-regional balance, and within a context of marked social, and not just regional, inequalities, it appears that global policy measures for regional development have yet to be brought into systematic operation.

In fact, the main national policy for regional readjustment is contained within the government's social policy and, more particularly, the National Solidarity Programme (PRONASOL). Most of the other federal policies with a significant impact on the country's regional development are directed towards specific sectors. An initial analysis of Mexico's "regional policies" can therefore be made by reference to *industrial* and *social* policies (PRONASOL), which seems to constitute the prime source of regional measures. The section that follows will consider the federal government's public policies which do not have explicitly regional aims but which do have significant regional impacts (the federal budget function of territorial cohesion and policies of privatisation and decentralisation).

INDUSTRIAL AND TECHNOLOGICAL POLICIES

Just as there is no regional policy, to a great extent there is no regional dimension to policies for individual sectors. In particular, there is no central agency responsible for encouraging industrial development in underdeveloped regions, and no system for economic stimulation which might differentiate between regions (employment or investment subsidies). In fact, the vast public industrial sector (oil, petrochemicals, mines, ports, etc.) did represent an important tool for regional industrial development and could have been considered the basis for a mechanism of regional industrial policy. Today, however, this role has been greatly undermined by privatisation. Further, the federal government had introduced strict measures to limit industrial growth within Mexico City up to the beginning of the 1980s, but these policies seem to have been abandoned.

However, Mexico's entry into the world market was to bring an increasing inflow of foreign investment capital, essentially from the United States. In recent years Mexico has received nearly 40 per cent of foreign investment in Latin America. Although the monetary crisis of 1994 and its attendant devaluations

weakened the domestic market, they stimulated development of the export manufacturing sector, particularly in the north of the country (85 per cent of Mexican exports in 1996 were manufactured goods, of which 85 per cent went to North America; 45 per cent of Mexican exports of manufactures come from the *maquiladora* industries). Foreign investment grew continuously in 1995 and 1996, with an increase of nearly US$7 billion in 1995, of which 65 per cent from the United States. These few figures explain why inward investment primarily benefits the border zone. As shown in the previous section (Figure 4 and Map 16), *maquiladora* employment was not at all adversely affected by the monetary crisis, and although this category of employment grew a little more rapidly in the non-border areas than in the border zone itself, 90 per cent of such employment is still located in northern Mexico.

With such powerful determinants of the geographical distribution of productive investment it is easy to see that a conventional type of regional policy, using direct incentives to shift this capital to inner regions that are less developed and farther distant from the centre of the NAFTA zone, would have every chance of being ineffective at best and inordinately costly at worst. Another important factor is that the very narrow interstate wage spread deprives the least developed regions of what could have been one of their main comparative advantages. Economic development of the country as a whole, led by the central and northern regions, is probably the prerequisite for the economic development of Mexico's most deprived areas.

One of the federal government's aims should be to assist the transition, already under way in certain sectors, from low-skilled industry, as basically at present, to industry with higher value added. Such an aim could be furthered by policies focusing on *i)* training and upgrading of workers' skills, and *ii)* diffusion of technology.

Job training

The technological level of Mexican industry is beginning to rise. This is largely due to the strategies of foreign groups operating in Mexico (they account for 16 per cent of the country's manufacturing employment, half of this being in the *maquiladora* sector) and, more generally, to the export industry's expansion, which was further stimulated by the devaluations linked to the currency crisis of 1994. For example, there has been a shift in the structure of the *maquiladora* firms: up to the early 1990s these were almost exclusively engaged in low-skilled assembly operations, whereas now they are more technology-intensive and use higher-skilled labour. Tariff dismantlement under NAFTA should accelerate this transition from an assembly industry – mechanical engineering, textiles, plastic goods – to an industry covering all manufacturing operations, incorporating more

technology and employing more highly skilled workers (as is starting to be the case with the rapidly developing automotive industry).

It would seem that the quality factor (referred to earlier as "organisational capacity" is becoming one of the essential criteria of the new conditions of international competition. Recent studies on the *maquiladora* sector have shown that its ratio of technicians and non-manual workers to manual workers is rising.[1]

To improve the skills of Mexican workers, particularly in the zones where industrial employment is highest, it will first be necessary to put through overall reforms to correct certain major distortions which at present determine the behaviour of firms. Federal labour legislation, as it now stands, may conflict with the natural inclinations of employers to train their staff: for example, federal law stipulates that in-firm promotions have to be awarded according to length of service! The recent reforms ending centralised wage bargaining have already been mentioned. One of the present tasks of COPREMOC, the new Mexican Council for Productivity and Competitiveness (set up in 1995), is to bring together representatives of labour, business and the public sector to negotiate a better linkage of wages to productivity performance.

Many countries provide job training through public institutions. Such schemes may have the disadvantage of supplying skills mismatched to employer demand. Mexico's PROBECAT programme, introduced in 1984, which offers business-matched training by private establishments to unemployed persons, has recently been assessed very positively, in terms of unemployment duration in particular. Broadly speaking, much of the training in Mexico is provided privately. The network of private technological universities, patterned on the Massachusetts Institute of Technology, is spreading over the whole country (in particular the network of some forty private universities deriving from the Monterrey Institute of Technology). Yet there may be some doubts as to the risks of social inequality and inadequacy of an exclusively private training system which is not accompanied by a significant public programme of study grants.

At this stage there seems to be plenty of room for developing job training policies. These should aim to stimulate not only skill supply but also skill demand from firms. Given that the abundance of labour and its very low cost, relative to other countries with a similar or higher level of development, have long been the chief comparative advantage of Mexico's most industrialised zones, there is little reason to think that industrial employers have a high spontaneous propensity to train their employees.

In Chile, the combination of tax incentives for employers and training vouchers for workers, together with the government's "auctioning" of traineeships to private and public training centres, is an example of a successful policy in this area. In Mexico a first experiment was made in 1995 with the introduction of new

tax legislation permitting the deduction of employee training costs up to a ceiling of 1 per cent of the firm's income over the training period.

Technology policy and support for industrial modernisation

Technology policy too has been marked by recent efforts to improve the position of Mexican industry and thus narrow the gap between Mexico and the other industrial countries. All the available data on integration of technological innovation into production processes show that Mexico lags well behind,[2] technology and research input being the lowest of any OECD country. Moreover, in 1993 Mexico was the country with the least government intervention to stimulate R&D (with only 0.5 per cent of R&D expenditure government-funded, compared with an OECD average of 14 per cent). It is also significant that the low level of R&D financed by government and firms in Mexico is combined with the fact that funding is focused essentially on public research which has no clear link with production performances. The Mexican banking system is generally reluctant to support technological development projects, and there is virtually no venture capital market to finance innovation.

In May 1995, however, the Mexican Government launched the National Development Plan (1995-2000), which aims to modernise the country's industry. It also set up, again in May 1995, the Mexican Council for Productivity and Competitiveness (COMEPROC), one of whose assignments is to promote industry spending on research and innovation. The first Report on the State of the Nation (1995) expressed the government's intention to develop research and increase the number of researchers, improve the quality of research infrastructures, and decentralise science and technology activities. In 1995 new legislation was introduced making firms' R&D investment tax-deductible.

CONACYT, the agency responsible for encouraging R&D, has created projects to incubate small businesses in technology parks and industry hotels since 1992. This programme has a regional dimension in that most of the projects are developed outside the central zone of Mexico. However, the majority are located in the most developed regions, where the highest concentrations of university researchers are to be found. This fact was criticised, moreover, by the Mexican Chambers of Commerce and Industry and CANACINTRA (National Chamber of Transformation Industry), which felt that the programme was too involved with the universities and not enough with small business (the bulk of CONACYT finance being distributed as higher education grants). At the same time, it should be noted that the regional approach to technology has been given fresh impetus with the creation of nine regional centres since 1994, each representing several states. These centres will be given budgets (through the creation of a regional development fund) to allow them to finance research projects contributing to regional

development. Seventeen such programmes (mainly agricultural in nature) have been accepted within the framework of SIMAC (System for the Sea of Cortés) for the north-western region of the country where the first centre is now operating. The regional centre scheme is a useful addition to the FIDETECH initiatives which focus on pre-competitive research. In 1994 the Mexican Institute for Industrial Property was set up to provide technical advice on problems connected with intellectual property and industrial patents.

Nevertheless, the fact remains that vital issues such as the marketing of technology and the availability of venture capital are not dealt with in this new framework. NAFIN, a national development bank, supporting industrial investment projects, only takes a hand, within the limits of its resources, in well-advanced projects, once again in the most developed regions. Implementation of a real regional technology policy is still lacking.

Tourism

Development of the country's tourist industry can also be counted as a tool of regional development. Tourist infrastructure is concentrated in southern Mexico, *i.e.* the poorest part of the country. Six major centres have been developed (Acapulco, Cancún, Ixtapa, Los Cabos, Loreto and Huatulco), enabling Mexico to welcome more than 6 million visitors each year and generating almost 2 million jobs. New projects are currently in operation – seaside resorts, amusement parks, opening-up of archaeological sites – which will enable Mexico to take more advantage of its huge tourism potential, while maintaining and developing appropriate activities for the traditional populations that inhabit these zones (crafts, restoration of archaeological sites, etc.).

REGIONAL ASPECTS OF SOCIAL POLICY

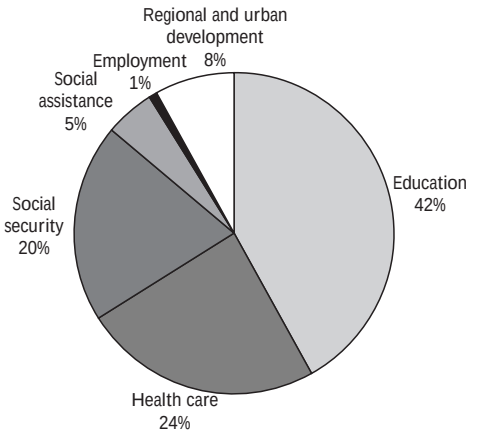
Heavy expenditure on social policy

The importance of the social sector among Mexico's priorities is clearly apparent in the federal budget figures. For 1997, federal government spending on social development accounts for 55.8 per cent of the programmable budget,[3] *i.e.*, 9 per cent of GDP. The budget also provides for a contribution of 12.1 per cent of programmable expenditure to the federative entities and municipalities, much of whose spending is in the social sector.

The chief items of federal government expenditure are education and health care (see Figure 6), which together account for almost 70 per cent of federal government expenditure.

Expenditure on regional and urban development represents only 4.5 per cent of the programmable budget, with half going to the poverty alleviation

◆ Figure 6. ***Federal government social expenditure, 1997***



Source: SHCP, *Presupuesto de Egresos de la Federación, 1997* (Ministry of Finance, National Expenditures Budget, 1997).

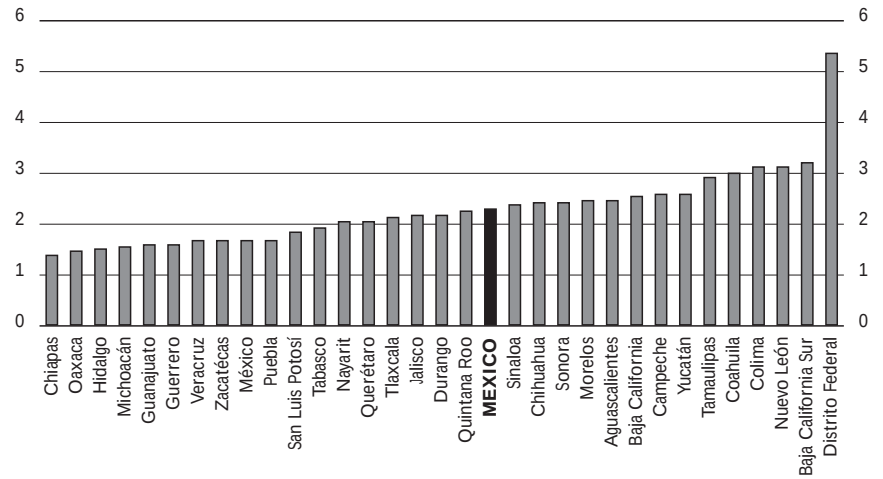
programme. This low figure should not be taken at face value since the other categories of social policy (education, health care, employment) have a strong territorial focus. A broader concept, incorporating elements of policies for the environment, infrastructures (drinking water supply and sewerage), housing, rural affairs and food aid, has been used when dealing with regional social policy.

Wide disparities in education and health care

The data contained in Figure 7 reveal wide interstate disparities in education and health care staff levels. The results of the INEGI census[4] show clearly that the states of Chiapas and Oaxaca, which are the poorest in terms of per capita GDP, are the least well staffed. By contrast, the border states of Nuevo León, Coahuila, Tamaulipas and Baja California, which are the richest and which benefit economically from transborder activity, have the highest levels of teaching and medical staff.

Such disparities take a long time to close because of the unequal tax revenues of the states and the scarcity of budget resources, which precludes spending on high-cost infrastructures like schools and health care centres. Expenditure of this kind, by itself, would have little chance of contributing to the development of

◆ Figure 7. ***Education and health***
Ratio of workers in education and health care/total population, 1990



Source: S. Levy and E. Davila, *Empleo rural y combate a la pobreza*, and INEGI.

the region and of the country as a whole. To be effective and to further an endogenous development, such measures have to be integrated in an overall territorial strategy which actively involves all agents. The Mexican Government has moved in this direction, moreover, by largely deconcentrating the federal budgets (and strongly encouraging the states to do the same with the municipalities) and restructuring the various activities connected with regional and urban development and poverty alleviation.

The responses: deconcentration of social policies and targeted programmes

Deconcentration of social development policies

On average, more than one-third of the federal budget is deconcentrated. With regard to social development, the most deconcentrated sectors are education (63 per cent) and poverty alleviation (65 per cent). The health care budget, on the other hand, is deconcentrated only as to 17 per cent, this share being intended to cover a population of 37 million. Deconcentration makes it possible to match budget management more closely to territorial concerns, but in Mexico it is having a limited effect because separate levels of official competence are involved. For example, any request for a change in the deconcentrated budgets

necessitates intervention by the federal government. Requests for change come either from the states (which also relay requests from the municipalities) or from the COPLADES (Comités de Planeación del Desarrollo del Estado), which are closer to the ground. They are dealt with by the federal government on a strictly individual basis and not by reference to an overall strategy.

Targeted development programmes

a) History of the PRONASOL national solidarity programme

The targeted programmes originally forming PRONASOL were a major component of the policy pursued by President Salinas under the National Development Programme (1989-94). Activities, in response to specific situations, were carried out under very localised schemes that aimed essentially to reach the populations that were most deprived and most affected by the withdrawal of assistance from the state concerned. The PRONASOL programme assisted 9 million people in 11 different states and 375 urban centres between 1989 and 1992. Each development project had three components: aid to agriculture, management of natural resources, and improvement of living conditions (see Table 9).

b) Reform of objectives

While maintaining the principle of targeted programmes, the Mexican Government undertook a revision of its objectives and instruments. The reform, as set out in the National Development Plan 1995-2000, consisted of focusing the regional and urban development programme on the central aim of poverty alleviation. In 1993 one-fourth of Mexico's population (*i.e.*, 22 million persons) were living in conditions of extreme poverty (with incomes less than the minimum wage for a 40-hour week). Of these, 63 per cent were living in rural areas and 37 per cent in urban areas. There are 91 regions (of the 208 which make up the Mexican territory) where poverty is concentrated, of which 18 are critical and in half of which extreme poverty exists (indigenous populations and peasants) – see Table 10 and Figure 8.

Comprehensive Strategy for Least Developed Regions. Since 1995 a strategy (Estrategia Integral para las Regiones Prioritarias) has been formulated by the Ministry of Social Development. This strategy consists first in the identification of those regions, composed of the municipalities where the indicators of lagging development (*indice de marginación*)[5] are more severe, second the implementation in those areas of high priority programmes in the building and improvement of basic services, infrastructure for health, education, employment, housing and nutrition needs. These regions are found in all of the 31 states of Mexico, covering 58 per cent of total municipalities, and 30 per cent of total national population. In these regions we find 24.8 million people, and 90 053 villages, of which 81 095 have less than 500 inhabitants.[6] The age structure shows a very young population,

Table 9. **Main projects and results of PRONASOL**

Programme	Aim	Results
	a) **Social welfare**	
IMSS-Solidarity	Health facilities.	1989-93: 1 200 medical units and 4 hospitals serving 5 million people.
Education infrastructure	Education facilities.	1989-93: Construction or improvement of 70 000 educational spaces for 2.9 million children.
"An Honourable School"	Upkeep of schools.	1990-93: Construction or improvement of 100 000 schools for 7.2 million children.
Drinking Water Supply and Sewage	Construction of networks.	1989-93: Construction or improvement of 11 151 networks serving 5.4 million people.
Food Supplies	Opening of food stores, dairy stores and popular kitchens.	1989-92: Capital subsidies provided to 10 193 stores, opening of 3 374 stores (with "Enterprises in Solidarity").
Electrification	Connection of households and public facilities.	1989-93: Electricity brought into 14 900 communities, 10 560 of them rural.
Women in Solidarity	Participation, training and development of women in the community.	1989-93: 2 383 production projects, 3 191 welfare related, benefiting 131 809 women.
	b) **Solidarity for agricultural production**	
Solidarity Fund for Production	Loans to farmers with low yields, or affected by natural disasters.	1990-93: Aided 1 million farmers.
Enterprises in Solidarity	Creation of a national fund to support enterprises. Finances economically viable or useful enterprises in disadvantaged communities.	1992-93: Aided 9 200 enterprises Created 42 000 jobs.
Regional Solidarity Funds for the Development of the Indigenous Communities	Support productive projects by Indian associations.	1990-93: 133 funds set up, aiding 80% of the Indian population. Created one million jobs (often temporary).
Coastal Fishing and Aquaculture	Aid for creation of enterprises.	1992-93: Creation of 69 aquaculture-related and 38 coastal fishing enterprises.
Aid Programme for Coffee Growers	Financial and technical support for small-yield coffee growers.	1989-93: 200 000 growers aided
Aid for Forestry Producers	Support for forest producers affected by deforestation, and reforestation.	1990-93: 73 forest workers associations aided, 163 nurseries, 36 million seedlings planted on 22 000 ha.

Table 9. **Main projects and results of PRONASOL** *(cont.)*

Programme	Aim	Results
	b) **Solidarity for agricultural production** *(cont.)*	
Productive Ecology and Forestry Solidarity	Support for environmental restoration and protection projects.	1992-93: Productive ecology projects in 14 states, protection of the Monarch butterfly, forests, fauna, waste recycling projects, 1 million trees planted.
Infrastructure to Support Production	Make available low interest loans to increase agricultural productivity through development banks.	1989-91: 300 000 poor farmers aided.
Solidarity Savings Caches	Manage repayments on loans from the solidarity fund for production. Community managed.	1992-93: 29 caches set up.
Solidarity with Agricultural Labourers	Financial and technical support to improve living standards of migrant workers.	1990-93: 263 000 migrant workers aided.
	c) **Solidarity for rural development**	
Municipal Solidarity Funds	Assist the poorest municipalities for infrastructure investment.	1990-93: 2 333 municipalities benefitted from this programme.
Road Building Programme	Maintenance and building of roads in rural areas.	1989-93: 184 500 km of roads constructed and rehabilitated.
Regional Development Programmes	Improve standard of living, productivity and infrastructures in poorest regions.	17 programmes launched in 12 states targeting 10 millions people.

Source: OECD (1994), "Solidarity in Mexico's rural areas", September, [document No. C/RUR(94)18].

that is, more than 43 per cent is less than 15 years old.[7] More than half of the population in those regions are found in municipalities with a low or very low degree of development. Sixty per cent of the population does not receive any income, and only 20 per cent receive more than one minimum wage.[8] Moreover, in those regions we can find 51 per cent of the illiterate national population and only 12 per cent of the population who have completed their elementary schooling. With respect to housing conditions, the data shows that 44 per cent of the residents in these regions do not have drainage or indoor toilets, 30 per cent lack electricity and 42 per cent do not have running water.

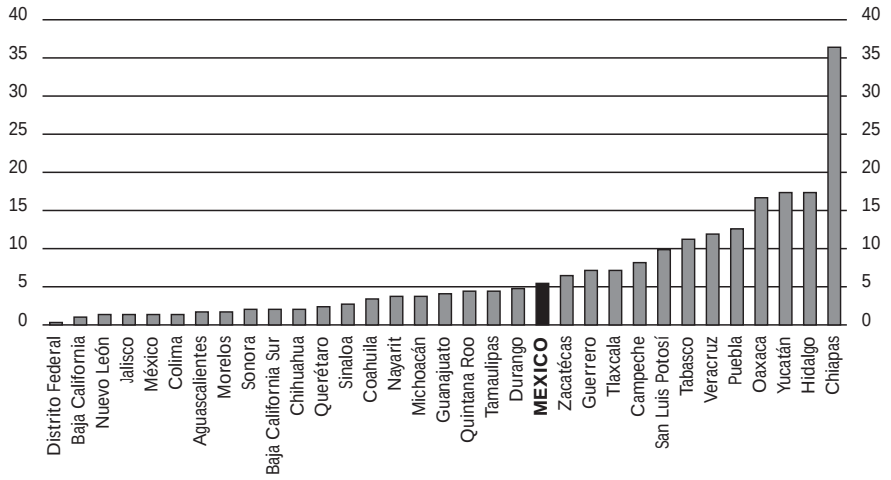
From these 91 identified regions, the 25 that have the worst development levels of all are composed of 688 municipalities in the states of Chiapas, Guerrero, Oaxaca, Hidalgo, Puebla, Veracruz, San Luis Potosí, Guanajuato, Querétaro, Chihuahua, Durango, México, Michoacán and Nayarit (see Map 17).

Table 10. **The 91 least developed regions**

States	Regions	States	Regions
Aguascalientes	Norte	Nayarit	Sierra del Nayar*
Baja California	Valle de San Quintín	Nuevo León	Desértica
Baja California Sur	Norte	Oaxaca	Istmo*
	Sur		Mixteca*
Campeche	Maya		Costa Chatina*
	X'Pujil		Mazateca-Papaloapam*
	Sur		Sierra Juárez*
Coahuila	Centro-Desierto	Puebla	Sierra Norte*
	La Laguna		Sierra Negra-Zongolica*
	Sureste		Mixteca*
	Frontera	Querétaro	Sierra Gorda*
Colima	Indígena	Quintana Roo	Maya
Chiapas	Selva*	San Luis Potosí	Altiplano
	Norte*		Huasteca*
	Altos*		San Luis
	Franja Fronteriza		Media
	Sierra*		Sierra Gorda*
	Las Cañadas*	Sinaloa	Serrana
Chihuahua	Tarahumara*	Sonora	Sierra de Alamos
	Del Desierto		Valle del Mayo
	De la Llanura		Sierra Central
Durango	Semidesierto		Bacum-Guaymas
	Las Quebradas*	Tabasco	Frontera Sur
	Indígena Sur		Chontalpa-Costa
	Indígena Norte		Centro-Sierra
Guanajuato	Sierra Gorda*	Tamaulipas	Centro
	Zona Norte		Suroeste
	Zona Sureste		Cañera
Guerrero	Costa Grande		Noreste I
	Tierra Caliente		Noreste II
	Filo Mayor*	Tlaxcala	Norte
	La Montaña*		Microregión Sur
	Costa Chica		Microregión Centro
Hidalgo	Sierra Gorda*	Veracruz	Huasteca*
	Valle del Mezquital		Sierra Negra-Zongolica*
	Huasteca*		Sierra de Soteapan*
	Otomí-Tepehua*		Valle de Uxpanapa*
Jalisco	Sierra Norte	Yucatán	Microregión 01
	Costa		Microregión 02
	Sierra de Tapalpa		Microregión 03
	Sierra de Manantlán		Microregión 04
	Sierra de las Bufas		Microregión 05
México	Norte		Microregión 06
	Sur*		Microregión 07
Michoacán	Tierra Caliente		Microregión 08
	Costa		Microregión 09
	Meseta Purépecha*	Zacatecas	Semidesierto
Morelos	Norte-Oriente		
	Suroriente		
	Surponiente		

* 25 regions that have the lowest rate of development. The regions Huasteca, Sierra Gorda and Sierra Negra-Zongolica are found in more than one state.
Source: Ministry of Social Development.

◆ Figure 8. ***Proportion of the population living in extreme poverty***
Less than the minimum wage



Source: S. Levy and E. Davila, *Empleo rural y combate a la pobreza.*

The strategy to achieve regional development in those areas consists of a series of actions which consider: integration, shared responsibility, decentralisation and a long-term vision to eliminate the structural causes of poverty. These actions concentrate on improving the conditions of nutrition and education, distribution and supply of basic products, temporary employment and basic social infrastructure.

The changes introduced since 1995 focus on programmes with an immediate direct impact on the living conditions of the poorest (water, drainage and electrification services) and give increased importance to the nutrition of indigenous populations, and more especially those at risk like children, expectant mothers and the elderly.

In 1995, 50 per cent of total programme resources, on average, went to the states and municipalities, this percentage has increased to 65 per cent since 1996. From the total programme resources in 1995, one-third went to states with people living in poverty and one-fifth to the indigenous populations. In 1996, more than 38 per cent of the total programme resources went to states with people living in poverty and little over 20 per cent to the indigenous populations.

Map 17. ***25 least developed regions***

Source: INEGI.

In 1996, 70 000 projects were presented including 7 800 projects for construction, extension or repair of drinking water supply systems, 4 610 projects for construction of sewerage systems, 3 943 electrification projects and 7 675 urbanisation projects in poor areas;

Nutrition, Health and Education Programme: the greatest lags in nutrition, health and education are found in nine regions of the country. Conditions are so severe in these regions that they call for specific attention. The special programme for education, health and nutrition (Programa de Educación, Salud y Alimentación, PROGRESA) will be implemented the second quarter of 1997 and consists of the following actions:

– a cash transfer to help the family's food consumption;

– basic health coverage, and

– scholarships to promote school attendance.

This programme will cover in its initial stage the nine richest regions which are located in 12 states.[9] In its first stage and by the end of 1997 it will have given aid to 400 thousand of the poorest families. The total budget for the first stage of this programme is 1 350 million pesos (approximately 158 million dollars). Its implementation will be done jointly by the Ministry of Health, the Ministry of Public Education and the Ministry of Social Development (see Table 11). This programme represents one of the most important changes in the types of aids provided by the government. It is a national programme that will operate with targeted subsidies to the identified poorest families in the country. It is hoped that with a policy of targeted subsidies, a decentralised operation scheme and community participation, government aid will be more effectively allocated to the most needy population of the country.

Supply, subsides, and distribution of basic products. For those least developed regions where the PROGRESA will not be operating in its initial stage, the existing programmes of supply, subsidies and distribution of basic products will

Table 11. **Nutrition, health and education programmes**

Institution	Actions	% Budget
Ministry of Social Development	Monthly monetary transfer	38.5
Ministry of Health	Basic health coverage	28.2
Ministry of Public	Education Scholarships	33.3
Total		**100**

Source: SHCP, *Presupuesto de Egresos de la Federacion, 1997* (Ministry of Finance, National Expenditures Budget, 1997).

Table 12. **Supply, subsidies and distribution of basic products**
Total expenditure includes current and investment expenditures of agencies
Thousands of dollars

Agency	Activities	Total expenditures	
		1995	1996
DICONSA	Basic products supply	78 451	79 868
LICONSA	Milk supply	194 506	169 918
FIDELIST	Tortilla supply	111 154	182 204
INI	Children's assistance	96 696	93 372

Source: SHCP, Ministry of Finance.

continue. This type of aid maintains the coverage of basic food supplies to families with the lowest income. These programmes (see Table 12) are the following: the commercialisation of corn and corn flour (by DICONSA), supply of milk to children less than 12 years of age (by LICONSA); supply of tortilla to those families with income less than 2 minimum wages (by FIDELIST)[10] and the operation of shelters for indigenous children (INI). Until 1995, aid provided through the supply and subsidies programmes operated as an allocation scheme characterised by a generalised subsidies policy, mainly applied in urban areas. Since then, these agencies have reoriented their activities in order to benefit a greater number of rural population that have the more severe levels of malnutrition and development.

c) Improvement of participation arrangements

In the context of decentralisation and deconcentration of large segments of Mexico's federal policies for health care, education and poverty alleviation, there are now an increasing number of mechanisms for project identification, selection and financing. The CUDs (Convenios Unicos de Desarollo) are bodies in which the different levels of government co-operate in the financing of public investment.

An increasing share of public investment transits through the Regional Development Budget, which is funded by specific grants from the federal government and counterparts from the states and municipalities. Responsibility for project execution generally rests with the states.

The COPLADES (Comités de Planeación del Desarollo del Estado) are planning committees funded by the federal and state agencies, and often representatives of the municipalities and the private sector, for discussion and co-ordination of investment programmes. This type of organisation is also found in a number of states, at the level of large municipalities (COPLADEM and COPLAMUN).

As regards the cities, the 1990-94 urban development programme has brought into being urban development commissions to co-ordinate action by the different levels of government as well as by private agents and communities.

d) Reform of instruments

The instruments of assistance are now organised according to the different levels of government. The present programme is built around five funds whose management necessitates extensive co-ordination

– *Regional Development and Employment Fund* (one-third of the resources of the poverty alleviation programme). The federation, states and municipalities participate: completion of public works for state development, special social programmes, temporary employment programmes and others that influence job creation. This fund also includes the aid given to specific social groups like: indigenous communities, agricultural workers, retired teachers and women and youth.

– *Municipal fund* (Fondo de Desarrollo Social Municipal, FDSM). This fund finances operations such as the rehabilitation or construction of rural roads and maintenance of rural medical centres. Since 1996, the resources of the Municipal Social Development Fund (FDSM) of chapter XXVI of the federal budget are distributed to states and municipalities through a formula that is designed to allocate those resources more efficiently and equitably. The federal government applies this formula taking into consideration national and state poverty indexes. The design of this allocation scheme was possible thanks to the collaboration of academic and specialised research institutions and public officials. The allocation procedure is carried out in a two step process. Firstly, an equity criteria is applied to make sure that all states get at least 1 per cent of the resources of the FDSM. Secondly, the allocation is complemented according to the analysed levels of poverty. This methodology is based on the Global Poverty Index, which considers the following variables: income per household, average school lag, housing space, electricity availability and drainage. This procedure has been made possible to increase resources given to those states with the largest population of poor (see Table 13). State governments are obliged to apply a similar formula for the allocation of resources to the municipalities. The methodology has been a process of continued improvement . By 1997, the data for the calculations was taken from the 1990 population census but by 1998 it is expected that this allocation procedure will be completed with fresher and updated information from the 1995 census data. By 1996, the least developed municipalities received 230.6 pesos per capita, contrasting with an average of 32.5 pesos per capita for the more

Table 13. **Municipal Social Development Fund**

Distribution of federal resources to states

	Millions of pesos		Per cent	
Aguascalientes	91.0	108.5	1.27	1.32
Baja California	81.4	127.3	1.14	1.55
Baja California Sur	76.7	92.9	1.07	1.13
Campeche	158	129.1	2.21	1.57
Chiapas	569.5	588.7	7.96	7.16
Chihuahua	161.8	208.9	2.26	2.54
Coahuila	107.2	164.5	1.50	2.00
Colima	79.7	98.7	1.11	1.20
Durango	199.2	201.5	2.79	2.45
Guanajuato	300.7	402.1	4.21	4.89
Guerrero	377.8	436.6	5.28	5.31
Hidalgo	302.2	306.9	4.23	3.73
Jalisco	251.8	328.0	3.52	3.99
México	366.6	541.9	5.13	6.59
Michoacán	318.4	412.8	4.45	5.02
Morelos	126.6	140.6	1.77	1.71
Nayarit	150.6	133.2	2.11	1.62
Nuevo León	110.4	177.6	1.54	2.16
Oaxaca	526.3	545.2	7.36	6.63
Puebla	418.7	508.2	5.86	6.18
Querétaro	196.3	156.2	2.75	1.90
Quintana Roo	134.4	119.2	1.88	1.45
San Luis Potosí	274.6	298.5	3.84	3.63
Sinaloa	170.5	200.6	2.38	2.44
Sonora	101.6	148.5	1.42	1.81
Tabasco	216.4	222.8	3.03	2.71
Tamaulipas	148.9	206.4	2.08	2.51
Tlaxcala	153.0	134.0	2.14	1.63
Veracruz	525.1	666.3	7.34	8.10
Yucatán	209.3	197.3	2.93	2.40
Zacatecas	245.5	219.5	3.43	2.67
Total federal budget	**7 150.0**	**8 222.5**	**100.00**	**100.00**

Source: *Diario Oficial de la Federación*, 1995-96.

developed. For 1997, the resource allocation of FDSM continued to favour the poorest municipalities, providing 246.5 pesos per capita, that is 156 per cent greater than the national average.

– *Regional Fund for Indigenous Populations* (Fondos Regionales Indígenas). This instrument promotes and finances the development of social infrastructure in regions where an indigenous population is concentrated. In 1997, almost 177 thousand indigenous people will have benefited from 1948 projects supported by this programme in 23 states in the country.

– *Fund to aid specific social groups.* The National Institute for Solidarity (Instituto Nacional de Solidaridad, INSOL) promotes social participation and collective decision making in public policy for social development. This institute also provides assistance, in coordination with NGO, to specific social groups such as youth, women and the elderly.

– *The Social Enterprises Fund* (Fondo Nacional de Empresas Sociales, FONAES). The goal of this fund is to contribute to the efforts of organised producers in the implementation of productive projects in order to generate employment and income which may help in increasing the standard of living in those regions. With those objectives in mind the fund provides technical and financial assistance, various types of training and guidance in commercialisation programmes. The various programmes of the Fund range from financial aid and collateral, to training, productive and temporary employment and saving instruments, among others. The importance of this fund relies on the fact that the groups helped are those that find difficulties to have access to credit and investment resources to develop their projects which are generally small and therefore not attractive to commercial banks or other financial institutions. The aid consists of providing the enterprise with risk capital up to 35 per cent of the total initial investment. Also important is the constitution of financing and collateral funds which help these groups to have access to credits from government and development banks in more ambitious projects. Between 1995 and 1996, 2 495 small enterprises were given support with these funds. From these, 31 per cent were provided with risk capital and the rest received credit from the Financing and Collateral Funds (Fondos de Financiamiento y Garantia). Due to the existence of these projects or social enterprises, 23 234 productive and-permanent jobs were created during that period.

An emergency temporary employment programme was implemented after the 1994-95 economic crisis and the consequent high levels of unemployment. The operation of the programme was linked to the following objectives: to channel resources to the most needy population, where the effects of the crisis had been most severe, the construction of basic and simple-to-build infrastructure (*e.g.* rural roads) and the strengthening of a decentralisation scheme. The programme was especially targeted to the poorest regions of the country and it includes a payment of 90 per cent of the value of a minimum wage per day of work. This was done with the intention of helping the population who were unable to get jobs with a full minimum wage during temporary or seasonal unemployment periods. In 1995, 550 thousand temporary jobs were created with a budget of 1 281 million pesos (200 million dollars). The success of the programme motivated the government to renew it in 1996 and 1997. In 1996,

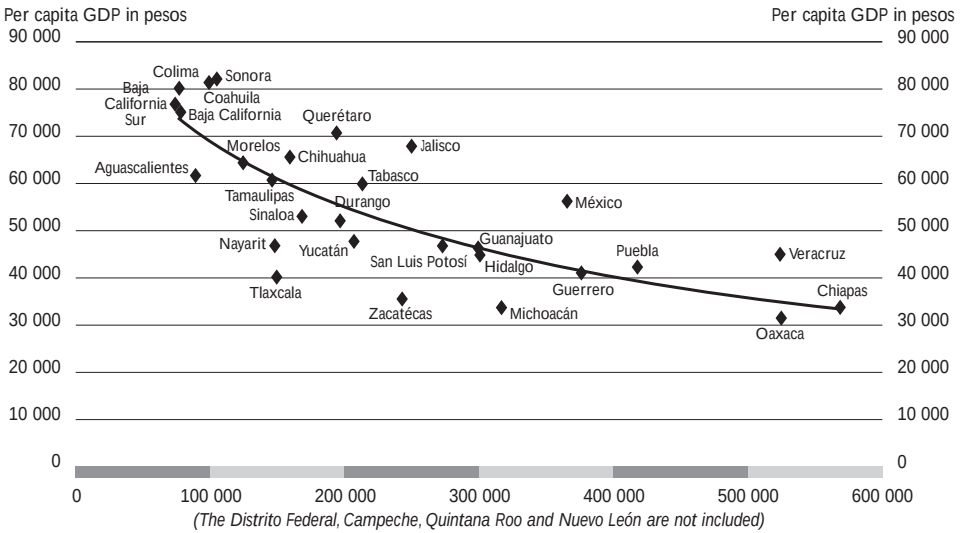
673 thousand temporary jobs were created, and in 1997 the target is one million temporary jobs with a total budget of 2 150 million pesos (252 million dollars).

Can social policy become a regional policy?

The targeted programmes coming under the budget head "regional and urban development" (which include poverty alleviation, the "hundred towns" programme, and the drinking water and housing programmes) are certainly having a strong impact on their targets, but they do not constitute a regional policy. They represent less than 4.5 per cent of the programmable budget (less than 1 per cent of GDP) and cannot therefore provide any regional impetus. The resources of the poverty alleviation programmes are partially or even wholly decentralised (in some cases the municipalities are free to earmark resources within the decentralised budgets). The allocations to individual states are determined by the Federation according to a key which takes into account average family budgets and basic needs at municipal and state levels. Roughly speaking, this key follows a logistic curve: the poorer states receive more funds (see Figure 9).

The targeted programmes do not set out to resolve the disparities between states and between regions within a state. They leave unchanged the wide imbalances in the provision of education, health care and employment. Nor do

◆ Figure 9. ***Relation between amounts allocated to poverty alleviation and GDP per inhabitant***



(The Distrito Federal, Campeche, Quintana Roo and Nuevo León are not included)

Source: INEGI.

they address the consequences of macroeconomic crises, notably the decline in living standards. A few figures are relevant here: in real terms over the period from 1982 to 1993 the minimum wage fell by 52.5 per cent, the contractual wage by 43.28 per cent, and pay in manufacturing industry by 40.63 per cent, in the *maquiladora* industry by 24.2 per cent and in the informal sector (construction industries) by 55.3 per cent.

With growth of real per capita GDP very insufficient (0.6 per cent a year for the period 1985-94), do the federation and the states have the means to create a regional social policy in the true sense and thus help to develop equal opportunities in all parts of the territory?

A number of facts show that there is potential for moving over to a genuinely regional policy. At the top, the federal government, in setting up a social development cabinet with extensive powers of co-ordination, can activate complementarities between the different social sectors. In the states, development strategies are being established and making it possible to better identify the priorities in each part of the territory and the means necessary to their realisation. At the lowest level, the planning and development committees (COPLADES) are trying to negotiate the necessary adjustments with the states and the federal government.

Several factors are restricting the scope of these initiatives, however. First, budget deconcentration at its present stage does not allow the possibility of making choices different from those made in ministries, except in the marginal cases where more than one level of decision-making is brought into play, a very cumbersome operation which cannot be applied systematically. Further deconcentration would require the Mexican government to improve co-ordination between federal departments and between the federation and local governments.

A second important factor working against the establishment of a regional policy is the lack of personnel at the different government levels to ascertain and relay the population's choices, formalise strategies incorporating several dimensions of development, set priorities and perform project analysis and evaluation. BANOBRAS, the public bank for civil engineering has stressed the need for training to enable local authorities to make investment choices.

NOTES

1. See David Turnham *et al.*, OECD, 1995.

2. See OECD (1996), *Science, Technology and Industry Outlook* – 1996, Paris.

3. The Total Federal Budget is composed of the programmable and non programmable budget. The first one comprises the federal government budget and the government owned enterprises' budget. The second one comprises the transfers to federative entities and municipalities, debt repayment and resources carried-over from previous years.

4. Data for 1990 are therefore fairly old. They provide an interesting picture of the state of disparities at a time when budgetary constraints were less severe than they are now.

5. The ''*indice de marginación*'' elaborated by the National Council of Population (Consejo Nacional de Población) takes into consideration nine social and economic indicators and measures the percentage of total population that lacks basic goods and services. These nine indicators are:

1) Percentage of illiterate population.
2) Percentage of the population 15 years old and older without completed elementary school.
3) Percentage of population in housing without drainage or toilets.
4) Percentage of population in housing without electricity.
5) Percentage of population in housing without inside running water.
6) Percentage of housing with some overcrowding level (hacinamiento).
7) Percentage of the population living in houses with floor of soil.
8) Percentage of the populations in settlements with less than 5 000 inhabitants.
9) Percentage of the employed population with income up to 2 minimum wages.

These indicators were taken from: Consejo Nacional de Población y Comisión Nacional del Agua, Indicadores socioeconómicos e indice de marginación municipal, 1990. Primer informe técnico del proyecto ''Desigualdad regional y marginación municipal en México'', Mexico, CONAPO, 1993.

6. The data for population has been taken from INEGI, Conteo de Población y Vivienda 1995, other indicators correspond to INEGI, XI Censo General de Población y Vivienda 1990 (1990 Population Census).

7. The national average is 35.5 per cent.

8. Minimum wage today is US$3.05.

9. Oaxaca, Puebla, Veracruz, Hidalgo, Guanajuato, Querétaro, San Luis Potosí, Campeche, Coahuila, Chihuahua, Guerrero and Chiapas

10. DICONSA is Distribuidora e Impulsora Conasupo, S.A., LICONSA is Leche Industrializada Conasupo, S.A., and FIDELIST is Fideicomiso de Liquidación del Subsidio a la Tortilla.

REGIONAL IMPACT OF THE MAIN STRUCTURAL POLICIES

In parallel with its sectoral policies for industrial development and social welfare, which in effect are often regionalised, the federal government implements major structural policies which, if lacking an explicit regional dimension, do have significant impacts on Mexican regional development. This report will now look at three of these "implicit regional policies": inter-regional redistribution of incomes through the federal budget, decentralisation and privatisation.

INTERSTATE REDISTRIBUTION OF INCOME THROUGH THE FEDERAL BUDGET

Before attempting to assess the regional impact of the Mexican federal government's main structural policies, it is relevant to try to gauge the regional effects of the budget as a whole. In all countries the primary mechanism of territorial cohesion through public policy is the central government budget. Mexico's federal government extracts revenues from the states and makes expenditures there. Since its revenues and expenditures do not match from state to state, the difference is made up by interstate transfers.

Numerous studies have been made on this subject in the industrial countries. The European Commission has recently published its First Cohesion Report 1996, which gives measurements of inter-regional redistribution through government budgets in seven major countries (Table 14).

Generally speaking, taxes are levied proportionally to incomes and expenditure allocated proportionally to population. This means that the tax revenues collected from the least wealthy regions are less than the public expenditures made there (education, health care, roads, etc.). In Europe, the Cohesion Report notes, the "donor" regions transfer on average 4 per cent of their GDP to the recipient regions, which increases the latter's GDP by 8 per cent. Earlier studies, on large federal countries and cited in a report by the European Commission,[1] indicate that federal budgets reduce disparities in per capita GDP by 50 per cent in Australia, 30 per cent in Canada and 25 per cent in the USA. There seems to be

Table 14. **Impact of tax receipts and public expenditure on inter-regional disparities in selected European countries**

Per capita GDP before and after budgetary effects, 1993

	% reduction of Gini Coefficient
Germany[1]	–16
Spain	–38
France[1]	–8
Italy	–28
Portugal	–11
Sweden	–14
United Kingdom	–33

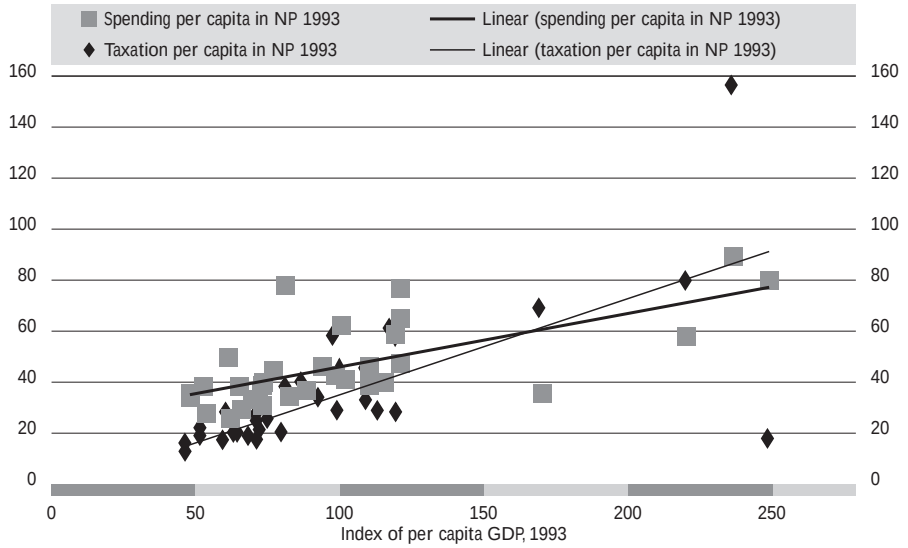
1. Excluding Social Security.
Source: European Commission (1996), *First Cohesion Report.*

no such type of calculation in Mexico, but it is possible to draw up a simplified model of the interstate distribution of federal government taxation and expenditure. Although the underlying assumptions[2] are somewhat oversimplified, the model does give some idea of this mechanism's contribution to the cohesion of the country.

Thus, Figure 10 suggests that even if federal expenditure tends to favour the richest states, these are ultimately net contributors because of their still larger input to the federal budget. The six richest states transfer 7 per cent of their combined GDP, which is equivalent to 11 per cent of the recipient states' GDP (see Table 15 and Map 18). This transfer reduces interstate income disparities by 14 per cent (unweighted coefficients of variation of states' per capita GDP, before and after transfers).

It would seem that the Mexican federal budget is set to play an increasing role in the country's cohesion. However, the authorities of the states which are net contributors – even though they lack exact figures for their net contribution to the federal budget and hence to the poorest states – already tend to consider their contribution excessive. The budget secretary for the state of Nuevo León has developed this argument at length before the Working Party, pointing out a widening gap, to the state's disadvantage, between the taxes levied there and the federal grants received. Although the impact of cohesion via the federal budget is limited, owing to the low weight of public funds in the economy and the magnitude of the territorial inequalities to be reduced, the net relative contribution of the contributor states is heavy: allowing that such comparisons should be treated with caution, it must be nearly double, as a percentage of states' GDP, that of net

◆ Figure 10. ***Simplified model of interstate distribution, 1993***
Mexico's federal tax receipts and expenditure
(excluding Campeche)



Source: Calculated from INEGI data.

Table 15. **Simplified model of interstate distribution of federal tax receipts and expenditure, 1993**

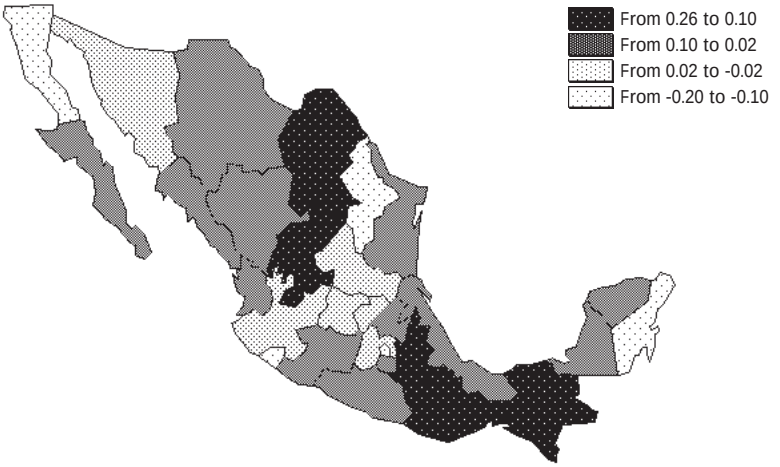
Per cent

	Main net contributors (6 states)	Main net recipients (17 states)
Population (% of total Mexico)	26	41
GDP (% of total Mexico)	43	27
Net transfer or receipt (% of states' combined GDP)	–7	11
Net transfer or receipt (% of national GDP)	–3	3

Notes: The 6 states transferring more than 1 per cent of their GDP via the federal budget are: Federal District, Nuevo León, Chihuahua, Quintana Roo, Baja California and Jalisco.The 17 states receiving more than 5 per cent of their GDP via the federal budget are: Tabasco, Tlaxcala, Oaxaca, Chiapas, Aguascalientes, Zacatecas, Colima, Puebla, Durango, Yucatán, Campeche, San Luis Potosí, Hidalgo, Nayarit, Michoacán, Baja California Sur and Veracruz.

Source: INEGI.

◆ Map 18. ***Simplified model of interstate distribution of federal receipts and expenditure***
Net transfers or receipts, 1993
(Mexico = 100)



Source: OECD, based on INEGI data.

contributing regions in the European countries (8 per cent of contributors' GDP in Mexico against 4 per cent in the European countries).

This is a problem which should not be underestimated. The instrument of territorial cohesion in Mexico, as in most other industrial countries, is the central government budget. The implicit principle underlying inter-regional solidarity is national taxation (at rates not particularly disadvantageous to the richest areas since their contribution is higher only because they generate more wealth) and some equalisation of expenditures as between populations. This principle of inequality of citizens *vis-à-vis* taxation and their equality *vis-à-vis* expenditure is the basis of national unity. However it is true, as pointed out by the secretary of the budget for Nuevo León, that this principle now penalises the highest-contributing regions more than before. In the past when the rich regions subsidised the poor ones, the latter used this additional purchasing power to buy from their subsidisers. This mechanism has been particularly well studied in Italy on the basis of input-output flows. Today, with the opening of international markets and especially in free-trade areas like the EU and NAFTA, trading solidarity between rich and poor regions is doubly in question: first, because poor regions now do not necessarily buy goods and services from their more developed neighbours and, second, because the latter, likewise confronted with competition in the market for

factors of production, need more than ever to mobilise all their public resources to enhance their comparative advantages and raise their productivity (infrastructures, quality of public services, etc.). Moreover, a number of other OECD countries are seeing the beginnings of a "tax revolt" by the richest regions on this same reasoning: Belgium, Italy, Canada and also Spain, where the Catalan authorities recently traded their support of the government for a budget refund of part of the national tax take from that region.

In Mexico's case there are a number of complementary answers to this question.

- First, there is reason to think that greater transparency of management and of the procedures for apportioning federal funds would improve relations between the federal government and the decentralised authorities. Mechanisms which in too many cases are implicit always gain by being made explicit, particularly in countries where there is sometimes doubt concerning the political determinants of public expenditure.
- Second, it can be argued that economic growth alone will cause the mechanisms of inter-regional solidarity to develop. In Mexico, as elsewhere in the world, economic growth is associated with growth of public funds (economists call this Wagner's law). The fact that a country – and especially an emerging country – undergoes the transformation from a planned and regulated economy to a free market economy does not necessarily reduce the relative weight of taxation, on the contrary (as with the development of an unemployment insurance system, currently lacking in Mexico). In Peru, for example, where economic policy has long been heavily interventionist and of a socialistic type, the result has been extremely low levels of growth, taxation and hence solidarity.

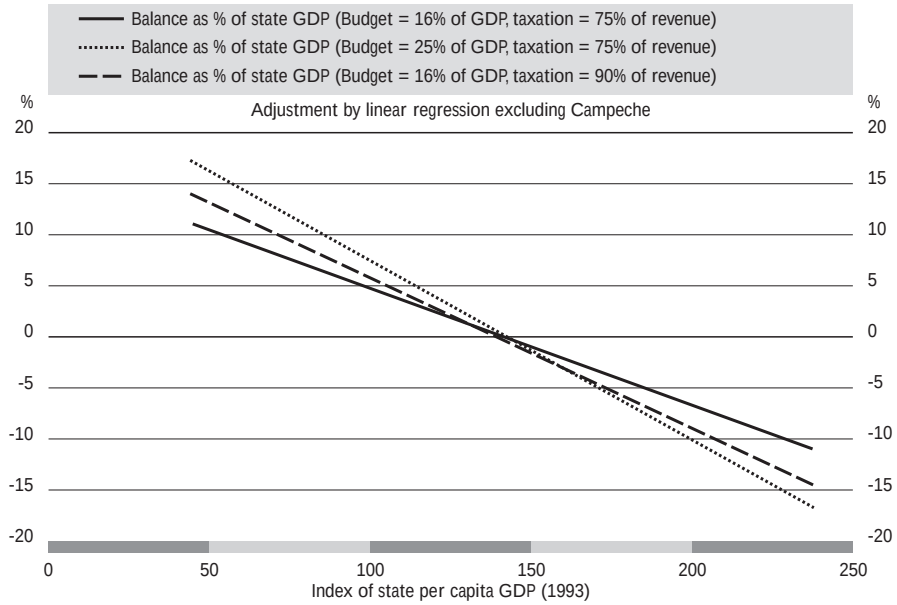
The development of a modern Mexican economy is having, and will have even more so in the future, the effect of expanding the mechanisms of solidarity because of the increase in the tax base, which itself is due to the rising ratio of formal to informal sector activity. Growth of the tax base could moreover be accelerated by a fiscal reform which would extend taxation to a very large share of incomes that escape it at present. (In its latest economic survey of Mexico, the OECD provides figures suggesting that pay structures in the informal sector are very similar to those in the formal sector).

The progressive replacement of public enterprise income by tax revenue in the federal budget will of itself increase the redistributive intensity of the federal budget. Further reduction of Mexico's public debt since the 1994 currency crisis – the debt declining from 70 to 23 per cent of GDP between 1988 and 1994 – will also help by freeing a larger share of revenue for "useful" public expenditure.

Figure 11 presents simulations of the sensitivity of interstate redistribution mechanisms to changes in the weight or structure of taxation in the federal budget.

Given the likely expansion of the redistributive mechanisms, *there should be room for some decentralisation of public funds which would make it possible, without endangering territorial cohesion, to reduce the net contribution of the most contributory states*. (By analogy, it may be enlightening to recall that the US fiscal reform of 1986 lowered rates of taxation while increasing the tax take.) There is reason to think that Mexico will thus be able to both maintain and develop a policy of strong solidarity which will be more effective economically (by easing the net contribution from the regions leading Mexico's growth and leaving them freer to put their resources to use) and, above all, politically acceptable to the chief contributors.

◆ Figure 11. ***Sensitivity study of the federal budget's redistributive mechanism, 1993***
Simplified model of federal budget distribution between states. Consequences of i) *an increase in the ratio of budget of GDP,* ii) *an increase in the ratio of federal tax receipts to federal government revenue*



Note: The balance for a given state is the difference between federal taxation and federal expenditure.
Source: OECD.

To conclude, the government will have to develop the right mix of two seemingly conflicting policies: on the one hand, to improve quantitatively the budget mechanism of interstate solidarity and, on the other, to put through reforms including financial decentralisation so as to ensure that the redistribution system ceases to produce excessive effects which might ultimately be harmful to it.

DECENTRALISATION

It has always been customary to treat decentralisation of revenue and decentralisation of expenditure as separate concepts. However, the principal goal of decentralisation – more effective public policies, as regards identification of needs and optimal use of scarce public funds – is achievable basically through the mechanisms of taxation. The ethos of decentralisation is essentially the demographic linkage between tax-paying citizens and their locally elected representatives. In short, there can be no decentralisation without democracy and without local taxation. On these theoretical grounds, but also because Mexico is experiencing special and acute problems on both counts, we have decided to approach the question of Mexican decentralisation from the standpoint of ''fiscal federalism''.

FISCAL DECENTRALISATION IN MEXICO

An historical perspective

A recent book by Enrique Cabrero Mendoza[3] analyses fiscal decentralisation in Mexico. Three periods are considered:

– 1975-83: high centralisation;

– 1984-89: top to bottom decentralisation; and

– 1989-97: bottom to top decentralisation.

In the first period, local governments' own resources had a slow dynamism and municipalities depended greatly of Federal transfers. In the second period, the article 115 of the Constitution which related to the states and municipalities was amended in 1993 with the objective of strengthening the municipal government. This reform consisted of providing a larger financial capacity through land tenancy taxes. The third period is characterised by a higher dynamism of the local government 's own resources explained by the increment of the public services tariffs and the public debt. Between 1975 and 1992, the municipal revenues increased to 225 per cent in real terms. However, this increment has not been homogeneous in all regions. Municipalities are divided in four types: metropolitan, large urban, medium-size urban and rural. The first three types of municipalities had the biggest increment in their tax revenues between 1975 and 1992 , 358,

441 and 264 per cent, respectively, while the tax income of the rural municipalities was only increased by 50 per cent during the same period. Cabrero concludes that more than half of the total revenues of the metropolitan and urban municipalities comes from their own resources. For the medium-sized municipalities, half of their total revenue comes from their own resources and the other half from transfers. It is only in the rural municipalities that transfers account for a large part of their total revenue.

In October 1996 the Administrative Collaboration Agreement was signed *(Convenio de Colaboración Administrativa)* which represents an important achievement in the decentralisation process. With these agreements, state governments jointly participate with federal authorities in the creation of different types of infrastructures, tax collection and goods and services production. At the beginning of 1996, an important source of state revenue was created, this was the sale of rights or licenses for the sale of alcoholic beverages and public advertising. Plans for 1997 include other significant steps towards the strengthening of state revenues. As of 1997, from each peso of federal tax collection, 51 cents are transferred to states and municipalities through transfer payments and participation.

The economic analysis of fiscal decentralisation

Two important findings emerge from the statistics available:[4] Mexican public finances are proportionally smaller than in most other OECD countries, and Mexico is still one of the most centralised countries in the OECD area.

Mexico is a country of low tax yield. In 1992, total public tax and non-tax revenue (not including income of public enterprises) was equivalent to only 13 per cent of GDP, *i.e.*, practically a third of relative tax revenue in other OECD countries. This low level of tax revenue (see Table 16) corresponds to low public spending. Two factors should be also taken into account: the relatively low impact of social security system, and the weight, in public revenue, of gross income of public enterprises (of which half, on average, over the period 1994-96 came from PEMEX activity and the country's oil export earnings).

Table 16. **Mexican government revenues as a percentage of GDP, 1994-96**

% of GDP	1994	1995	1996
Total public revenue	25.8	22.8	22.8
Tax and non-tax revenues	17.2	15.2	15.4
Income of public enterprises	8.7	7.5	7.4

Source: Banco de Mexico.

Even though the proportion of tax and non-tax revenue has risen since the late 1980s and that of public enterprise income has fallen accordingly, the level of public resource utilisation in Mexico is still low. There are obvious disadvantages to a tax system which depends heavily on direct personal and corporate income tax (more than 50 per cent of tax revenue in 1992) in a country where informal-sector activity and income are still very considerable. The OECD's latest Economic Survey of Mexico (Economic Survey : Mexico 1997) quotes the findings of different studies which establish that the majority of workers in agriculture and between one-fifth and one-third of those in urban employment are in the informal sector, and it should be stressed that these proportions are probably rising. The plans to develop indirect taxation based on consumption will no doubt serve to raise the country's present very low tax yield. In 1995, value added tax was increased from 10 to 15% and the share of indirect taxes increased in 1996 and 1997.

Contrary to what might be expected in a federation, Mexico is seen to be a country with a relatively low level of decentralisation. Table 17 provides comparative figures for different industrial countries. The three ratios indicate Mexico's position in terms of fiscal federalism. Decentralisation is not a one-way mechanism. There can be strong decentralisation of public expenditures and continuing strong centralisation of fiscal revenues. Finally, the degree of fiscal autonomy (the share of own

Table 17. **Public financial decentralisation in Mexico and other selected countries**[1]

Count	Year	Ratio 1 Decentralisation of taxes	Ratio 2 Decentralisation of expenditures	Ratio 3 Fiscal autonomy
Mexico	1992	12	17	54
Germany	1991	28	53	45
Australia	1991	18	65	38
Belgium	1991	5	30	33
Brazil	1991	35	66	44
Spain	1990	13	50	46
United States	1987	32	60	48
France	1992	10	30	49
Italy	1989	3	48	32
Portugal	1990	4	12	50
United Kingdom	1991	4	42	31
Sweden	1992	34	74	29

Note: Ratio 1 = (Local and regional taxes)/(Total taxes) × 100.
Ratio 2 = (Regional and local expenditures)/(Total public expenditures) × 100.
Ratio 3 = (Regional and local resources net of transfers)/(Total regional and local resources) × 100.

1. Prud'homme, R. (1995) *Assignment of expenditures and taxes between levels of Government for the Republic of South Africa*, OEIL/IUP Université Paris XII, Créteil, Polyg. 20 pages.

Source: Prud'homme, R. (1995), from IMF data.

revenue, *i.e.*, excluding transfers, in local revenue) is a third gauge of a country's decentralisation. This third ratio does not derive arithmetically from the first, owing to the existence of income from properties or undertakings owned by local governments (which, as will be seen, is very largely the case with the Mexican states and municipalities).

The tax take of the states and municipalities is only 20 per cent of the country's total tax take, and their share of expenditure in total national expenditure, although larger by nearly half owing to the weight of transfers, is still rather smaller than in other countries. If this information is combined with what was noted earlier concerning the low ratio of public tax revenue to GDP, it can be said that Mexico's local public sector is both relatively poor and not very decentralised. This is shown in Table 18: decentralised taxes represent barely 5 per cent of the taxes levied in Mexico and are equivalent to only 0.5 per cent of Mexican GDP.

While theory can help to define the effects of the different components of a decentralised system, the very complexity of the decentralisation concept does not permit automatic application to the case of a particular country. Several reports by the OECD Working Party on Regional Development Policies have

Table 18. **Public revenue by government level in Mexico, 1993**

	New pesos m.	% of federal total	% of GDP
Federal government revenue	203 417	100.0	13.0
Taxes	149 164	73.3	9.5
Other revenue	54 253	26.7	3.5
States' revenue	51 885	25.5	3.3
Total transfers ("participaciones")	25 262	12.4	1.6
Taxes	1 584	0.8	0.1
Other revenue	25 039	12.3	1.6
Total transfers as % of revenue	49%		
Federal district revenue	12 251	6.0	0.8
Total transfers ("participaciones")	5 500	2.7	0.4
Taxes	3 048	1.5	0.2
Other revenue	3 703	1.8	0.2
Total transfers as % of revenue	45%		
Municipal revenue	12 749	6.3	0.8
Total transfers ("participaciones")	6 104	3.0	0.4
Taxes	2 599	1.3	0.2
Other revenue	6 645	3.3	0.4
Total transfers as % of revenue	48%		

Source: INEGI and Banco de Mexico.

already examined the contribution of decentralisation to territorial development[5] and have shown that decentralisation is a composite phenomenon with several dimensions. Table 13 above gave three of these dimensions by differentiating between rates of decentralisation of expenditures, taxes and fiscal autonomy.

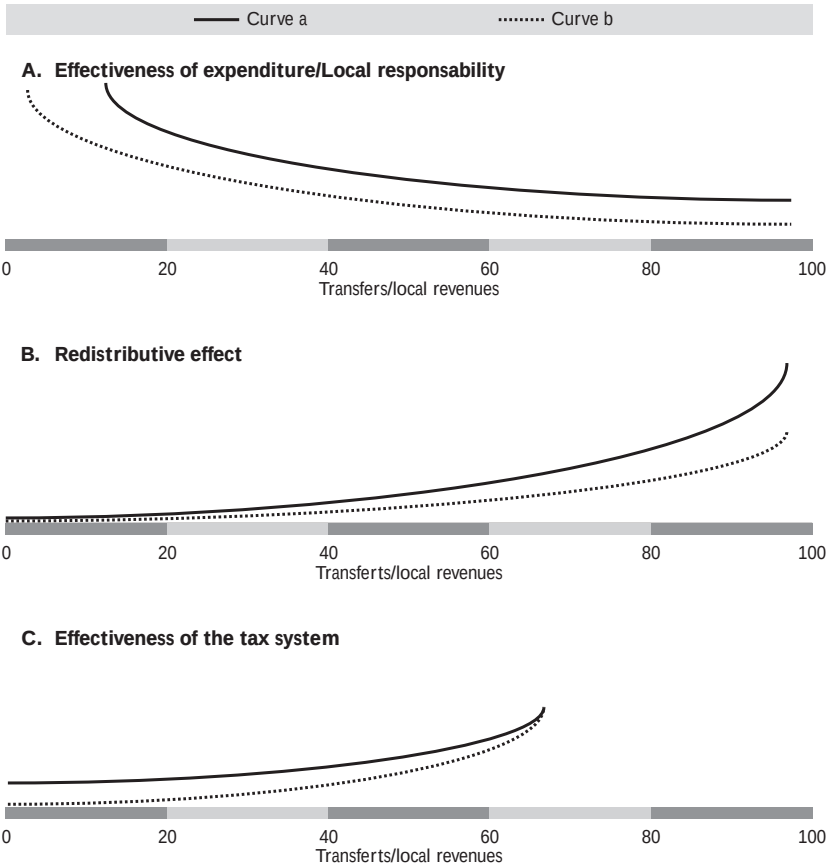
Most of the governments of the world's countries have undertaken to decentralise their public administrations. The aim is the same everywhere: to use the votes of local tax-paying citizens to reform inefficient public services, to stimulate emulation among local governments, and to facilitate a better allocation of scarce financial resources. On the other hand, the forms taken by decentralisation in those countries are very different. This international diversity in the manner of implementing decentralisation indicates a certain deficiency in thinking on the actual ingredients of successful decentralisation. Decentralisation or certain methods of decentralisation are not without risk[6] and do not always guarantee better economic growth.[7]

The establishment of a decentralised system implies resolution of the dilemma between, on the one hand, more local responsibility, hence more effective expenditure and, on the other, more redistribution and better allocative effects of the tax system. This dilemma is illustrated by the figures below, but does not take into account the weakness of fiscal administration in subnational entities. However, the situation of Mexican decentralisation can be measured against the three mechanisms described therein.

The effectiveness of decentralisation depends largely on the proportion of local taxes in local revenue: more taxes mean more responsibility, more transfers mean less responsibility (Figure 12*a*). However, the redistributive capacity of the tax system depends largely on the proportion of transfers in local revenue. A system of complete tax decentralisation, in which local expenditure was entirely financed by local taxes, does not make it possible to offset territorial imbalances in the tax base (Figure 12*b*). Lastly, and as a general rule, almost all types of tax introduce more distortion if they are levied locally than if they are levied nationally, posing problems with regard to macroeconomic stabilisation policies (Figure 12*c*).

Figure 12*a* shows that the main benefit expected from decentralisation depends on the share of expenditure financed by local taxes. In a system where all local expenditure is financed by government subsidies there is almost no overlap between the local electorate and the population of taxpayers financing local expenditure. In such a system electoral verdicts on local political leaders do not depend directly on the quality of their management or on the cost-effectiveness of their programmes. Elected officials function more like a sort of cash dispenser for central government funds, their political role being to maximise the amount of transfers they can obtain for their constituencies. There is little incentive for electoral sanctions of the quality of management of money that

◆ Figure 12. ***The main trade-offs associated with fiscal decentralisation***



Source: OECD.

has come from elsewhere. The difference between curve a and curve b reflects the differences that may be introduced by sociological factors, themselves often interlinked, such as the decision takers' technical competence, local corruption levels, the strength of a democratic culture, press freedom, etc. Conversely, when all expenditure is financed locally the degree of control exercised by the tax-payer/voter is much greater and the electoral verdict on decision takers is directly influenced by the quality of their management. As federal government transfers

represent on average about half the revenue of local governments (states and municipalities), Mexico seems to be in a midway position in this respect.

One important feature of Mexico's current system immediately limits the effectiveness of this relationship between the voter/taxpayer and elected officials: elected officials can occupy executive office only once. This principle, rooted in the wish to put the interests of the community before those of the politician and to guard against abuses of personal power, restricts the scope for sanctioning past policies through the ballot box, even if the political nature of elections, at all levels, makes it possible to express a verdict on the political parties in power.

This initial observation of the real weight of local and central taxation needs to be tempered, however, because taxes constitute only a small part of the revenue of states and municipalities (see Table 19). By a sort of accounting sleight of hand, budget presentations tend to understate the real size of federal government transfers to states and municipalities.

On an adjusted basis,[8] transfers account for almost 90 per cent and 65 per cent of the total revenue (excluding accounts receivable and cash in hand) of states and municipalities respectively. The situation in Mexico thus tends towards the "cash dispenser" scenario mentioned earlier. Even including other local revenue alongside local taxes, such as income from public enterprises, the amount of which varies with the quality of local management, the level of tax decentralisation is low. This is even more true of the states than of municipalities.

The recent deconcentration of the education budget and of a substantial slice of the anti-poverty programme has not made elected officials more responsible *vis-à-vis* their electors. However, the system whereby loans to state and munic-

Table 19. **Structure of the budget revenue of states and municipalities, 1992**

Thousands new pesos		%	Thousands new pesos		%
Total revenue (states)	51 885 182	100	Total revenue (municipal)	12 748 592	100
Taxes	1 584 238	3	Taxes	2 599 489	20
of which: direct	1 306 695	2.5	*of which:* direct	–	–
indirect	277 520	0.5	indirect	–	–
Block grants	25 262 507	49	Block grants	6 104 274	48
Duties	1 704 387	3	Duties	1 030 640	8
Income	1 896 233	4	Income	575 185	5
Occasional revenue	3 783 016	7	Occasional revenue	1 007 553	8
Public debt	5 796 986	11	Public debt	573 945	5
Accounts receivable	10 814 728	21	Accounts receivable	556 882	4
Cash in hand	1 043 087	2	Cash in hand	300 634	2

Source: INEGI.

ipal authorities were guaranteed almost automatically by federal government funds was ended in 1996. This perverse system meant that ultimately a great many investment choices were never subject to the approval of banks or local electorates because they were guaranteed, after a thoroughly opaque decision-taking process, by the federal government. These loan guarantees could also be used to balance the books of public enterprises whose losses were attributable to poor management, notably a failure to recover fees from users.

Figure 12*b* shows that the higher the level of central government subsidy, the easier it is to ensure redistribution or perequation of local public resources. Conversely, a system in which all local public resources are collected locally does not permit perequation and results in considerable imbalances between local authorities. However, the extent of redistribution also depends on the progressivity[9] of the transfer system (which explains the difference between curve a and curve b in Figure 12*b*). Central government subsidies may be allocated according to criteria that ensure a high level of redistribution between local authorities. Thus, more resources can be allocated to the poorest governments by using criteria linked to development levels, for example, or by making an identical grant per inhabitant in all regions, the effect of which is to give the poorest regions relatively more help than the richest regions. Conversely, if they are based on a criterion such as the level of local government expenditure, they can amplify public revenue inequalities.

Unfortunately, in Mexico as in many other countries, the territorial objectives pursued through subsidy allocation systems are composite, combining several sometimes contradictory goals, and their results are ultimately unclear. Officially, the Mexican system for allocating block grants ("participaciones") to state and municipal authorities consists in sharing national taxation. Twenty per cent of the taxes collected by the federal government are redistributed to the states, 5.5 per cent are redistributed to the municipalities via the states and 0.5 per cent are paid into an urban fund. The scales applied are complex, but the shareout of total amounts is as follows: 45 per cent in proportion to the number of inhabitants, 45 per cent on the basis of the states' tax collection capacity (the states collect federal taxes on the government's behalf) and 10 per cent on the basis of poverty indicators. However, although the amount of federal government block grants to the states is based on the objective criteria mentioned above, the share of grants made to municipalities through the states is allocated by a formula which takes into account different variables including the population of each state, the tax collection made by the federal government, and the socio-economic level of the Mexican states.[10] This leaves the municipalities almost entirely dependent on state governments and leaves considerable scope for patronage to flourish.

In order to gain a more accurate assessment of the redistributive capacity of the federal government block grant system, we calculated the correlation, for all

Table 20. **Correlation coefficient between block grants and local public revenue respectively and GDP per inhabitant**

States and municipalities grouped by states, 1988 and 1992

	States		Municipalities		Total	
	1988	1992	1988	1992	1988	1992
Block grants per inhabitant to GDP per inhabitant	0.36	0.43	0.47	0.66	0.39	0.45
Total local revenue to GDP per inhabitant	0.42	0.54	0.42	0.62	0.49	0.56

Source: Calculated from INEGI data.

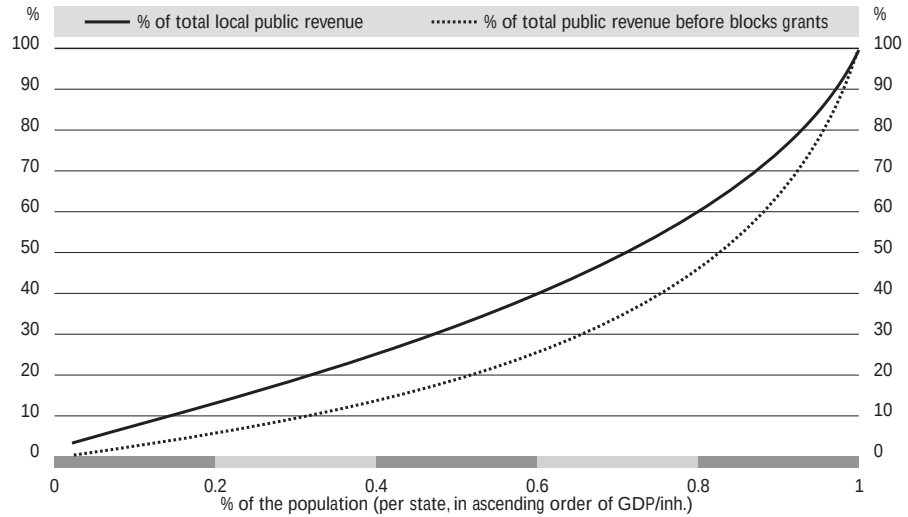
states, between the development level of the states and municipalities (GDP per inhabitant) and two other criteria, namely the level of grant per inhabitant, and the level of public revenue per inhabitant. The results are shown in Table 20. It is apparent that, broadly speaking, transfers per inhabitant are linked to income per inhabitant, a result that is valid for both states and municipalities. This means that the system is close to a proportional subsidy system: apart from the poorest regions, the richest receive the most and *vice versa*.

Two other observations can be made from this table. First, the link between grants and income is less strong for states than for municipalities. This means that the system is more redistributive between states than between municipalities. Second, for both states and municipalities, the redistributive effect weakened between 1988 and 1992 while the link between grants and income per inhabitant seems to have strengthened.

Although the municipalities and the states of the poorest regions seem clearly to receive less in grants than those of the richest regions, a powerful redistributive effect remains nonetheless. As indicated earlier, a proportional subsidy system can be redistributive if other local revenue is even more closely linked to income than grants are. In Mexico's case this seems to be borne out by the fact that correlation coefficients are higher for total revenue than for grants. In a nutshell, and paradoxically, the inegalitarian block grant system actually offsets the highly inegalitarian nature of the allocation of local governments' own resources, as the concentration curves below show (see Figure 13). The Gini coefficient measuring the inequality of public financial resources per inhabitant in 1992 before and after block grants falls by 26 per cent.

The paradox is therefore that even if central government subsidies tend to favour rich regions over poor regions, they nevertheless offset a significant part of

◆ Figure 13. ***Concentration curves of local public revenue in Mexico (states and municipalities)***
Analysis by state, 1992



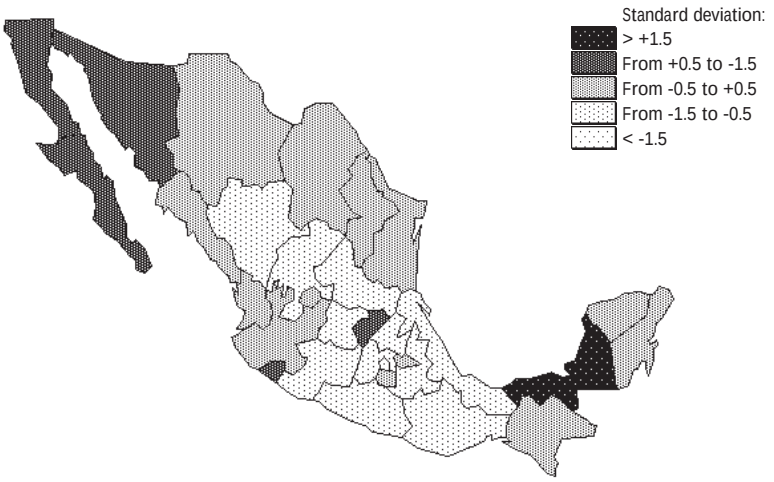
Source: INEGI.

the disparity between the own revenue of Mexican local government authorities (see Map 19 and 20).

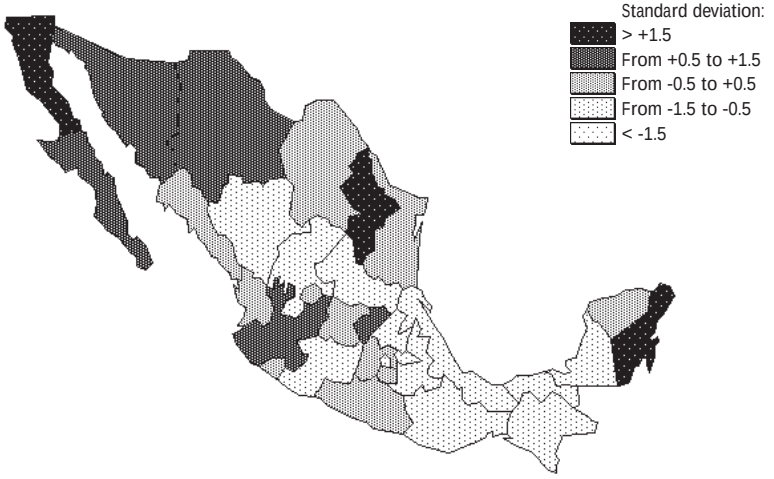
Several factors militate against a significant decentralisation of tax (Figure 12*c*). From a national standpoint, almost all local taxes have adverse allocation effects which offset the positive effects expected from them locally. This is one of the main justifications for the existence of central government subsidies to local authorities, since they permit an adjustment between a desirable level of expenditure decentralisation and a reasonable level of tax decentralisation. Most local taxes encourage mobile factors of production (labour, capital) to move to places where rates are lowest and not necessarily to places where they are the most economically effective, one repercussion of which may be to draw the country into a spiral of territorial imbalances. If tax resources are distributed unequally between local authorities, the provision of services will be correspondingly unequal, attracting even more wealth to better off areas and further increasing the tax base, and so on. As far as regulating the economy is concerned, the transfer of a substantial share of tax resources to local authorities that are sometimes difficult

◆ Maps 19 and 20. ***Block grants and taxes, per inhabitant, 1992***
States and municipalities, excluding the Federal District
(Mexico = 100)

Map 19. ***Block grants per inhabitant***



Map 20. ***Taxes per inhabitant***



Source: INEGI.

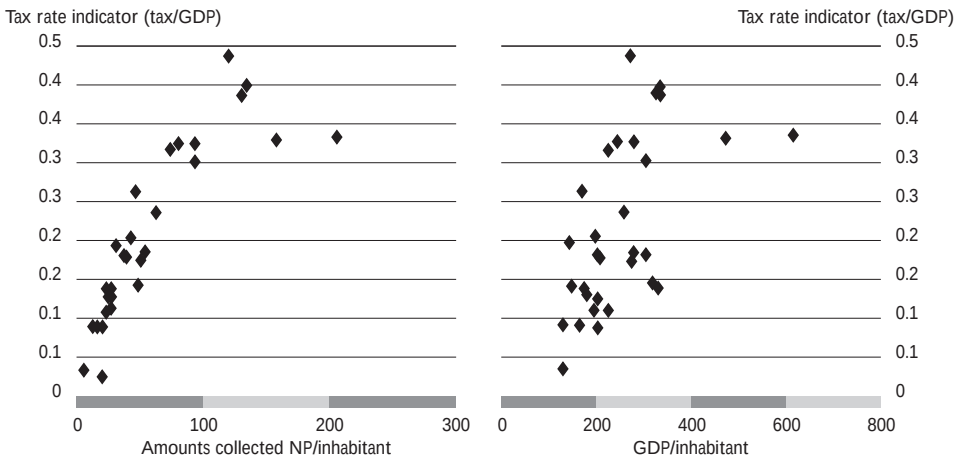
to control can impair central government's ability to implement macroeconomic stabilisation measures.

Local government tax revenue in Mexico is directly linked to local income (see Figure 14). The correlation coefficient between local tax revenue and GDP per inhabitant in 1992 was 0.6. This suggests that the link would be even stronger if the calculation were based on disposable income. (As we pointed out earlier, GDP per inhabitant overestimates inhabitants' real income, for example in oil-rich regions like Campeche.).

The striking feature in Mexico's case is that on a regional basis the tax rate[11] rises with GDP per inhabitant, whereas rich states might have been expected to take advantage of their bigger tax base to reduce rates. Disparities between GDP per inhabitant range from 1 to 7, whereas disparities between the amounts collected range from 1 to 50! This fact may be regarded as symptomatic of the great disparity in the contributive capacity of the regions and of the underdevelopment of local taxation in the country in general. The combination of the two means that great care should be taken with decentralisation projects and suggests a need for differentiated treatment of issues relating to local public finance. Average tax per inhabitant in the poorest regions, like Chiapas and Oaxaca, was around 5 to 10 New Pesos in 1992, compared with 130 to 150 in Nuevo León, Sonora and the

◆ Figure 14. ***Local taxation (states + municipalities)***

Relationships between amounts collected per inhabitant, the rate of tax pressure and GDP per inhabitant



Note: The tax pressure indicator is a ratio between amounts collected per inhabitant in New Pesos in nominal terms and GDP per inhabitant in constant terms at 1980 values.

Source: INEGI.

California states, for example (see Map 20). Such disparities, occurring with such regularity, can clearly not be explained simply in terms of variations in tax collection rates (even though it would be instructive to study them). Rather, they suggest a profound split between regions where incomes fall below a threshold permitting an increase in the tax effort and others whose level of development has already created a contributive capacity permitting the development of genuine local taxation.

Local taxation in Mexico, the low level of which we have already stressed, is moreover largely based on direct personal taxes, which account for three quarters of the taxes collected by states. We have already emphasised the problem posed by this type of tax in a country (and in certain regions of the country in particular) where the informal sector is still large. Broad-based taxes – easily identifiable, cheap to collect and less open to evasion – would of course be greatly preferable. Land tax, the form of local tax generally preferred by economists, raises a number of problems. These may be technical (keeping land registers), social (taxation of landowners – or their tenants – whose income is often below the poverty line) or political/administrative (updating of tax bases). The latter is one of the main reasons why the tax revenue of municipalities is so low. The disadvantage of vehicle taxes, fuel taxes, alcohol taxes and consumption taxes in general is that they are often regressive; the advantage is that they are easy to collect and have only a marginal effect on the price of products purchased by solvent customers in both the formal and informal sectors.

The federal government is currently taking measures that tend towards greater tax decentralisation, including the transfer to the states and municipalities of 20 per cent of the special tax on output and services, a tax faculty on hotel occupation, taxes on alcohol, beer and cigarettes and the tax on new vehicles. Moreover, the actual process of decentralisation allows better management of funds in regional social policy (Chapter 26 of budget and "PROGRESA" programma de educacion, salud y alimentación, for example) and in areas such as agriculture, education and health.

In conclusion, this review of tax decentralisation in Mexico raises a certain number of points that may help to guide considerations of how to increase decentralisation[12] with a view to territorial development.

– The main effect expected from decentralisation, in Mexico as elsewhere, is more efficient public management. This improvement is expected because elected officials faced with the electoral verdict of their taxpayers/voters are more likely to behave responsibly. It is appropriate, therefore, that a significant amount of tax should be levied and borne locally. Little can be expected from decentralisation without local taxation. In this respect local

elected officials in Mexico, managing around 5 per cent of national taxes representing 0.5 per cent of the country's GDP, have very little incentive to behave responsibly with regard to their voters/taxpayers.

– Nonetheless, the adverse effects of higher local taxation in terms of territorial imbalances can be corrected only by perequation or redistribution measures linked to subsidies. In Mexico today, transfers (both formal block grants and less transparent transfers of all kinds) make up the bulk of local authority resources. The redistributive function of block grants ("participaciones") is paradoxical: allocated in proportion to the income of local inhabitants on the basis of composite criteria which political objective is far from clear, they nonetheless reduce local public revenue disparities between states by 25 per cent.

– It is striking to note that disparities in local tax revenue stem more from disparities in taxation rates than from the nonetheless considerable disparities in states' wealth. Moreover, this disparity in tax revenue lies behind the ultimately redistributive effect of block grants. The chain of effects behind this inequality of tax resources suggests that some particularly poor local governments are incapable of taking advantage of the scanty taxation powers accorded to them.

The Mexican Government has to make choices between more effective public management and greater solidarity and even-handedness in social and territorial development. These choices depend largely on a country's specific situation and political goals. There do indeed seem to be several Mexico, as some commentators have pointed out, and the choice between allocation and redistribution cannot be the same in all parts of the country.

The issues of effective public management and democracy are foremost among the country's concerns. This suggests that the principle of allocation should be given priority over redistribution in the reforms to be undertaken, and that Mexico's states and municipalities should be empowered to levy genuine local taxes.[13]

It is true that increasing local tax revenue may correspondingly amplify territorial disparities, which in any case tend to develop spontaneously as a result of market pressures. It seems clear that if certain taxes were to be decentralised, some regions would be able to raise the necessary funds for development and others, the poorest, would not, or at least not in any quantity. This is a risk that must be partially accepted and guarded against. In a country where the disparities between economically underdeveloped and economically modern regions are so great, it is simply not possible to imagine implementing perequation policies or ensuring equal treatment throughout the entire country.

There are three types of action that central government can take in order to reduce disparities:

- A ''solidarity'' or ''social'' strategy designed to alleviate extreme poverty, targeting household income. This is the strategy behind the centrally funded Solidarity programme.
- An ''offer of service'' strategy emphasising the reduction of disparities in the consumption of public services such as education, healthcare and security. These are the objectives both of decentralisation and of territorial redistribution mechanisms linked to the federal budget.
- A ''productive'' strategy designed to reduce output disparities and to encourage improved productivity and greater value added at regional level, in particular through productive infrastructure such as transport networks, telecommunications, technology transfer centres, etc. These objectives are pursued through both federal spending and decentralisation. Some states like Veracruz, Tabasco and Hidalgo, though still poor, are seeing the beginnings of productive development in certain areas and it would be reasonable to support it.

These three strategies may be combined, and it is clear that the financial channels through which they can be implemented are sometimes the same. The strategies are perhaps not equally effective in all regional contexts, however, so that the three strategies should be weighted differently according to a particular region's level of development. The ''solidarity'' strategy is effective mainly in the poorest regions where the priority is to boost incomes. The effectiveness of ''offer of service'' strategies increases slightly with the region's development level (especially as regards scale effects linked to urbanisation levels). ''Productive'' strategies are most effective in regions that have already reached a certain level of economic development.

It seems clear that for many years to come the most effective regional policy, offering the best use of public money, will be the solidarity policy, followed secondarily by the offer of service policy (social services, education, etc.). These policies were served by the National Solidarity Programme,[14] by the general effects of interregional transfers linked to the federal budget, but could be amplified by adjusting block grants so as to ensure greater redistribution.

In conclusion, better decentralisation in Mexico cannot be achieved purely through financial and tax measures. There can be no significant improvement in the efficiency of the country's public management unless a certain number of constitutional reforms are introduced to support current and future trends in tax decentralisation.

As one Mexican senator told the working group, decentralisation in Mexico must first be a constitutional process. The Mexican constitution is extremely far-

reaching, extending into areas that go way beyond the constitutions of other OECD members. In decentralisation as in many others areas of the country's economic life, numerous reforms need to be made. These include the current arbitrary boundaries of the country's municipalities (the average size of municipalities per state varies from 4 500 inhabitants for the 600 municipalities of Oaxaca to 600 000 for the 5 municipalities of Baja California); promoting local autonomy with regard to the power of the states (as things stand at present, municipalities are entirely dependent on state authorities. Their creation or dissolution, the suspension of local administrations, the amount of the block grant allocated to them, their tax rates, etc. are decided by the state Congress); and electoral reform (extension and possible renewal of terms of office, which are currently limited to three years and non-renewable).

The regions that stand to gain most from the positive effects of tax decentralisation are those that have already advanced towards economic development. There is nothing offensive in the notion that the same tax system may do virtually nothing for very poor and assisted regions while other regions can use it as a foundation for local development policies; on the contrary, it may even be desirable. It means accepting, in fact if not in law, that the same decentralised tax system for all local governments may have different effects, both geographically and over time, that effective local democracy (the formation of a dynamic link between elected official and taxpayer/voter) will develop more quickly in the most developed regions and cities, where it is also most desirable, while other regions will remain subject for a longer time to a system where patronage tends to be more prevalent and will move at a slower pace towards the full exercise of decentralisation.

TERRITORIAL CONSEQUENCES OF PRIVATISATION

In its initial stages, privatisation in Mexico was conducted without regard for regional policy considerations. The aims were to modernise infrastructure and the means of production and hence to make business and industry more competitive. Privatisation also helped to modernise the machinery of the federation. The experience gained from the currency crisis has caused the Mexican authorities to take greater account of territorial concerns in recent privatisations. Undeniable progress has been made in this respect, even bearing in mind that states and municipalities have relatively little leeway.

Initial stages

In its initial stages, privatisation was conducted without regard for regional considerations. Privatisation began in 1982, when Mexico launched an ambitious programme to privatise public enterprises. The airlines were the first to be

privatised. The first infrastructure privatisations began in 1988. The pace of privatisation was stepped up from 1991, extending into the banking sector, the service sector and infrastructure.[15] The primary aims of privatisation were to restore competitiveness, balance budgets and modernise the legal framework for the operation of the Federation.

1. Restoring competitiveness
   - In a context of globalisation, and in order to solve problems resulting from widening development gaps with the countries of North America, the need to open large tracts of the economy to competition became increasingly clear. Mexico's dilapidated infrastructure and uncompetitive industry cried out for vigorous modernisation, and privatisation and inward investment were seen as the priority vehicles for it.
   - The legislative reforms to underpin an operation on such a scale had become essential following Mexico's membership of NAFTA, the WTO and the OECD. This was reflected in the passing of legislation governing competition, trade, inward investment and capital movements. The laws presupposed the opening up of markets and the dismantling of regulations that distorted competition.
   - With the introduction of greater competition and the prospect of a market on which substantial economies of scale were available, a considerable but unexploited capacity to compete was found. The necessary next step was to privatise infrastructure, the feeble productivity of which increased businesses' operating costs. The Mexican Government embarked on a step-by-step privatisation of infrastructure. Attracting foreign capital was all the more necessary given the high level of investment required and the aim of linking Mexican infrastructure with North American networks.
   - The expected benefits of privatisation[16] are considerable. The modernisation of the market is likely to lead to lower prices and a corresponding increasing in the population's welfare. Investment should also generate a large number of jobs, producing Keynesian growth effects in many areas and favouring endogenous development.
   - Lastly, the inflow of fresh capital and the modernisation of infrastructures should also favour technology transfers and improve skill levels in the labour force.
2. Balancing budgets and the need for leeway
   - Before embarking on the privatisation of public enterprises and infrastructure, the Mexican Government found itself facing a dilemma. On the one hand, investment had been neglected for years because of austerity programmes and a lack of budget resources, prices had been

held down to abnormally low levels for social reasons, and tariff structures had become inadequate, driving relatively unprofitable activities into the red and preventing all subsequent modernisation. On the other hand, the government was obliged to give massive subsidies to loss-making public enterprises.

- Privatisation made it possible to break this vicious circle. Not only did the sale of assets or concessions bring in considerable amounts of revenue, it also substantially reduced the level of government assistance to public enterprises, from 12.7 per cent of GDP in 1982 to 2.5 per cent in 1991. Government income was also expected rise as a result of direct revenue from corporate income tax (the rate is 35 per cent of profits) and indirect revenue from the other components of value added.
- This additional revenue afforded the Mexican Government some budgetary leeway. A substantial proportion was allocated to reducing the public debt, while another part was used to fund social policy and anti-poverty programmes.

3. Modernising the Federation

- Privatisation was an indirect means for helping to modernise the Federation, involving a far-reaching overhaul of the constitutional, legislative and regulatory framework on which it is based and the introduction of new rules for awarding concessions (ensuring a level playing field for all companies) and the supervisory mechanisms they entailed.

The territorial benefits during the initial stages of privatisation were essentially indirect.

- When developing its social programmes, the Mexican Government did not seek to anticipate the adverse social consequences of privatisation in those regions where they were likely to be most keenly felt. Moreover, social policy criteria tend to target populations (indigenous populations, small towns, rural development) rather than regions.
- Likewise, regional balance is more the result of stepping up supply side policies (revitalised business and industry, better infrastructure networks) than of costly and directive public investment. Once concessions had been awarded, the federal government chose to limit its intervention in the infrastructure sphere, targeting the least favoured regions and areas of high unemployment and leaving other investment to the states, which have deconcentrated budgets.
- The particular problem of Mexico City is an illustration of this. There is no appropriate territorial policy within the metropolitan area. Privatisation, generating vigorous economic activity in other parts of the country, is

regarded as a contributory factor to the business relocations that are beginning to take place.

The evolution of the process

Deregulation and administrative simplification

Deregulation of Business Activity: In November 1995, the federal government implemented the Administrative Resolution for the Deregulation of Business Activity[17] which states the criteria that standards and requirements already set must fulfil in order to remain in effect. Moreover, to advance deregulation at the state level, all 31 states have issued legal instruments analogous to the Administrative Resolution for the Deregulation of Business Activity, for application within their perspective scopes and jurisdictions.

Better functioning market: The Federal Economic Competition Act has been strictly enforce, and this has resulted in a substantial increase in the number of actions taken to prevent and correct business practices that obstruct competition. Between 1995 and 1996, the number of cases under investigation for industry concentration and practices that restrict competition rose from 30 to 38. In addition, the number of legal consultations regarding competition practices grew 27 per cent.[18]

Financing for new homes in Mexico City : On April 29, 1996, the Mexican Congress approved a bill that will streamline legal procedures, reduce borrowing costs for businesses and individuals, and help increase the availability of financing for new homes in Mexico City. One of the most important reforms contained in the bill was that of the Federal District Civil Code. The reform will promote the construction of housing in general, but especially low income housing.

Privatisation of infrastructures

The December 1994 Peso crisis highlighted the process shortcomings and involved the more systematic incorporation of territorial aspects. In December 1993, the Ministry of Communications and Transport published a report entitled ''Investment Opportunities in Basic Infrastructure 1993-2010''. Investment needs were estimated at US$35 billion. The report also estimated that 60 per cent of this amount could be raised from the domestic or foreign private sector. The breakdown was as follows:

In US dollars:

15 billion for roads;
2.4 billion for the railways;
770 million for ports;
1.25 billion for airports;

9.03 billion for electricity;
5.04 billion for water.

A number of shortcomings became apparent when the privatisation process[19] was set in motion.

a) Poor assessment and problems of sectoral co-ordination[20]

- Assessment procedures proved to be unsatisfactory, resulting in unsuitable routes, poor assessment of expected benefits (especially traffic forecasts), etc. The regulatory framework for privatisation was also inadequate: the lack of independence on the part of the assessors (who in many cases were also the operators) and the lack of transparency were frequently criticised. In some cases, government-controlled enterprises submitted bids during privatisations.
- Rules governing the financing of transactions were also insufficiently clear and the government was over-generous with its guarantees. The machinery for ensuring that financial responsibilities were shared in the event of conflict turned out to be ineffective and it was generally left to the government to bail out companies in difficulty.
- At this stage, the plans drawn up by ministries with sectoral responsibility did not make effective provision for consulting local authorities and did not include any consideration of the complementarity of infrastructures. Moreover, the first wave of privatisations was carried out without any changes to tariff structures or reform of laws relating to users' rights.

b) Concessions were awarded without sufficient consideration of long-term aspects

- Operators were too quick to seek a return on their investment. The privatisation of the road system is a case in point. Projects plainly lacked any rigorous analysis of the impact of privatisation on growth, and insufficient consideration was given to social costs.
- The Mexican Government and the operators to whom the first concessions had been awarded, notably those with motorway concessions, bore the full brunt of the 1994 crisis, with its attendant slump in the value of the peso and sharp rise in interest rates.

Following the crisis in December 1994 privatisation plans are continuing, albeit more cautiously and with a greater awareness of the need to take regional concerns into account.

a) Following the crisis, the government was obliged in 1996 to launch a financial rescue plan involving support programmes for banks and debtors that cost an estimated 8 per cent of GDP (*1997 Annual Review – Mexico)*.

It is difficult to determine the part attributable to the shortcomings of the privatisation process, but the cost of the financial restructuring of the motorway network alone came to 0.6 per cent of GDP.

b) Some privatisations, such as that of Telefonos de Mexico, have clearly been successful. The government sold its shareholding in Telmex in May 1994. In April 1995, Congress passed a telecommunications law establishing the framework for an environment entirely open to competition. American operators can offer long-distance services in Mexico, and competition is expected to lead to a 25 per cent cut in prices for 1997. In exchange, Telmex is authorised to operate in the United States.

c) The government has sought greater and more intense competition between operators. As regards the ports and airports, the aim is not merely to privatise the management or award limited concessions for the construction of new terminals, as had been the case since 1991, but to privatise the ports authority and open the entire sector to competition. Privatisation can also involve intermodal projects, making it possible to establish road-rail links (see section on railway privatisation).

d) In order to overcome objections relating to the loss of sovereignty, the government has had to redefine what it understands by the term national interest. In the petrochemical sector, the government has taken a step-by-step approach:

- Sale of enterprises under direct government control. This policy, set in train at the end of the 1980s, has considerably reduced the number of state-run enterprises, from 1 155 in 1982 to 160 by mid-1993. The sell-off raised US$26-27 billion.
- In April 1995, the government passed a law authorising private enterprises to distribute natural gas in Mexico, putting an end to PEMEX's monopoly.
- In October 1996, the number of products of which it was the sole producer was cut, while at the same time a new privatisation plan for the secondary petrochemical sector was launched.

e) The federal government has also encouraged lower tiers of government to launch privatisation initiatives.

Assessment

Despite recent improvements, the consideration given to regional aspects of privatisation remains insufficient.

a) It is still difficult to assess the effects of deregulation, notably in terms of lower prices and improved living standards, because several measures

(tax deductions, free trade policy, macroeconomic adjustment) have affected price structures.

b) Introduction of co-ordination committees at regional level

– In its most recent privatisations, the federal government has created co-ordination committees bringing together private and public sector interests in order to ensure that regional considerations are factored into operators' decisions. In this way the states, which now manage substantial deconcentrated budgets, have been given a voice (see section on the privatisation of ports and the example of the port of Veracruz). Although this is an undeniable advance in managing the consequences of privatisation, it cannot be regarded as a genuine regional policy: the states' scope for action is limited because their deconcentrated budgets are pre-allocated.

c) BANOBRAS, the financial body responsible for infrastructure, puts the accent on training those involved (firms, local authorities, etc.) by making databases available to them and by training them in assessment techniques.

d) Link with the decentralisation and deconcentration process

– Privatisation and decentralisation/deconcentration have gone hand in hand, but the implications of the one for the other have not been properly measured. If the legal framework governing the transfer of powers had been completed, it would have been possible to gain a better understanding of the strategy and responsibilities of states and municipalities and the financial leeway available to them. An observation period for the new legal framework would also have been necessary in order to iron out problems and see how it worked in practice. Greater familiarity with the new rules would have allowed those bidding to take over public enterprises to position themselves better.

– For most infrastructures the process is one of deconcentration rather than decentralisation. Investment choices are steered by central government, and the states and municipalities had limited influence on the master plans for Federation territory

e) Privatisation has not been matched by greater financial transfers to the states, who do not have discretion over deconcentrated budgets. The federal government has had to cut back its own investment.[21] Privatisation has not been carried out on anything like the same scale in the states and

municipalities, not least because there are very few project assessment resources and hence very few eligible projects.

Territorial consequences

Privatisation affects different parts of Mexican territory.

a) Border states: Sonora, Baja California, Chihuahua, Coahuila, Tamaulipas, Nuevo Léon.

- These states have benefited from vigorous cross-border business and trade. The most profitable road and rail concessions will be here. These regions also have sufficient tax revenue to finance their own infrastructure and to offer local firms and *maquiladora* industries efficient transport and communication networks.
- This type of development procures little benefit for the rest of the country, however, because the *maquiladoras* use imported products and do not sub-contract. Moreover, the large, globally competitive firms are capital- rather than labour-intensive, employing relatively small workforces. Manufacturing represents only around 30 per cent of GDP (1993 data) in the state of Coahuila, which specialises in steelmaking, and in Nuevo Léon, which has developed a wide range of manufacturing activities and whose capital Monterrey is home to the headquarters of Mexico's major industrial firms. In the other states, manufacturing accounts for only 17 per cent of value added.

b) States lying between the border states and the states surrounding the Distrito Federal: Aguascalientes, Guanuajuato, Zacatecas, Durango, San Luis Potosí, Querétaro.

- Development can be envisaged along the great arteries leading to the border. In the mainly agricultural states of Zacatecas and Durango, better infrastructure would make it possible to step up production (wood in Zacatecas, cattle and farm produce in Durango).

c) States surrounding the Distrito Federal: Mexico, Hidalgo, Tlaxcala, Puebla, Morelos.

- These states have sound infrastructure, modernised since privatisation. They have motorway links with Mexico City and are well provided with north-south and east-west road and rail links. They have good access to the port of Veracruz.
- They are benefiting from saturation in the metropolitan area and business relocations. The population of the metropolitan area has stopped expanding and the business exodus is increasingly noticeable. The

manufacturing sector is more extensive here than in the rest of the country, accounting for 25-30 per cent of GDP.

d) Coastal states with major port facilities. On the Pacific: Sinaloa, Nayarit, Jalisco, Colima, Michoacán, Baja California Sur; on the Atlantic and Caribbean: Veracruz and Yucatán.

  – There are major ports on both coasts. Some of them were built or modernised in the 1980s as part of an initial attempt to improve the territorial balance. However, the question is whether they will be able to take market share from competing foreign ports through which a substantial share of Mexico's imports arrive. Privatisation should give them a shot in the arm (see section on the privatisation of ports).

  – Leaving aside the immediate effects on employment, consideration needs to be given to coastal development. There are three ports in the state of Veracruz, requiring specialised port facilities. Coastal development planning should also include the United States and Caribbean coasts. Better intermodal links, especially road-rail, are needed in order to develop the ports.

e) States benefiting from the oil industry: Campeche, Tabasco.

  – Although the level of GDP per inhabitant in these states is among the highest in the Federation, the benefits in terms of living standards are comparatively small. Petrochemical facilities have been built in other parts of the territory and there is relatively little manufacturing industry.

f) Rural or enclave states: Chiapas, Durango, Guerrero, Oaxaca, Quintana Roo.

  – These states are handicapped by their distance from the centre and by their lack of infrastructure. Modernisation and privatisation projects have focused on a small number of routes (Acapulco-Cuernavaca motorway, Tuxtla Gutierrez-Cosoleacaque road). Most of the states are also handicapped by a small labour force and conditions of extreme poverty.

HISTORIC OF PRIVATISATION OF MAJOR ROADS, RAILWAYS, PORTS AND AIRPORTS

State of the road system before privatisation

The density of Mexico's road network in terms of km per million inhabitants is ten to twenty times lower than that of the other OECD countries, though it is comparable with that of other Latin American countries such as Brazil and Argentina. The primary cause for concern, however, is not so much the low density

Table 21. **Surfaced roads (km)**

	Total	Federal	States	Rural	Local
1990	239 235	47 503	61 108	97 503	33 120
1991	241 962	48 485	61 108	99 249	33 120
1992	243 856	49 278	61 736	99 722	33 120
1993	245 183	49 954	61 998	100 111	33 120
1994	303 414	49 273	56 149	147 456	50 536
1995	307 983	49 518	56 936	150 927	50 602
1995/90	5.18	0.83	–1.40	9.13	8.85

Source: INEGI.

of the road network as its poor quality, coupled with the inefficiency of the road haulage fleet.

In an economy where roads and motorways account for 80 to 90 per cent of all freight and passenger transport these factors are a serious economic handicap, increasing costs and sapping the vitality of the regions by hampering mobility and modernisation.

61 per cent of major roads in 1994 were of poor quality and 29 per cent of mediocre quality; only 10 per cent were satisfactory. Road haulage is provided by more than 100 000 operators, most of whom are owner-drivers. Traffic increased by 23 per cent over the period 1989-92 following the deregulation of road transport in 1989, but new road construction failed to keep pace.

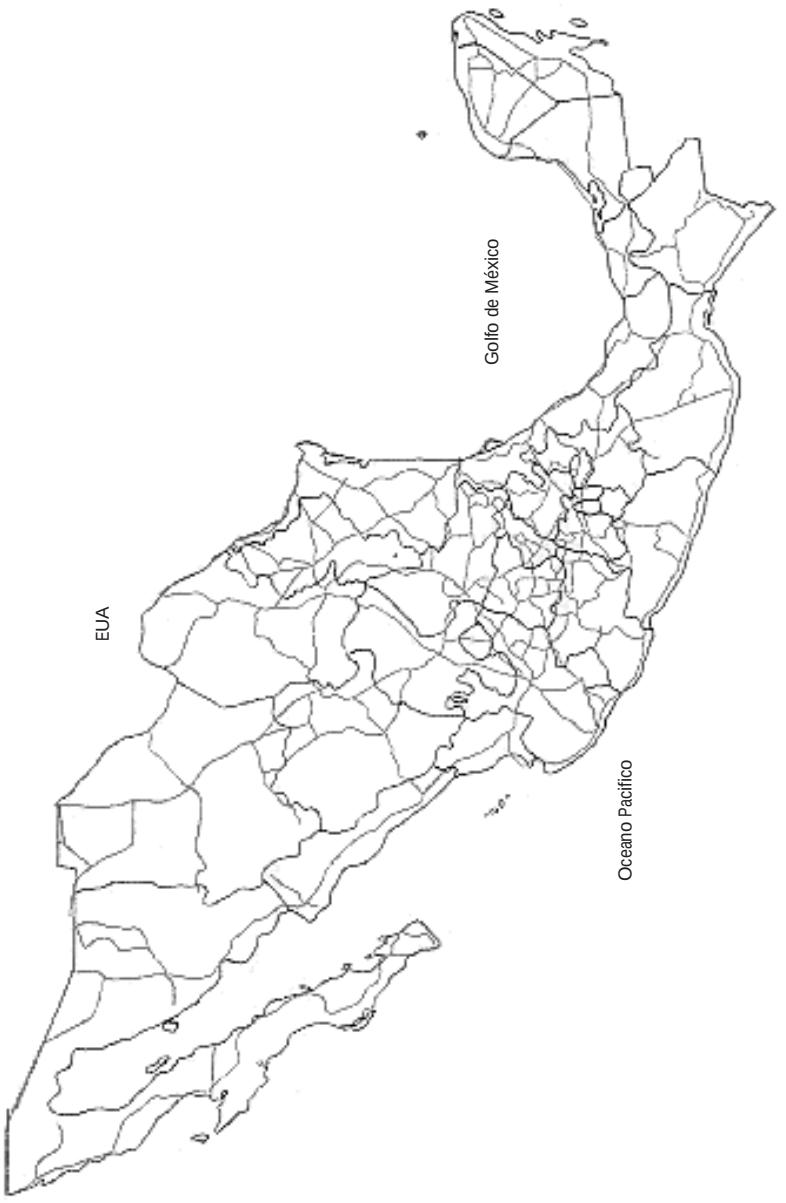
The increase in federal and state road capacity in the first half of the 1990s was much lower than the corresponding figure for GDP growth by volume over the same period (2.6 per cent) – see Table 21. This shows that the Mexican Government's policy of privatising sections of major roads failed to stimulate expansion of the road network.

Privatisations

Major roads represent 95 000 km of surfaced highway, the federal government being responsible for one half of this amount and the states being responsible for the other half. They account for 85 per cent of domestic trade and 99 per cent of inter-city traffic. The Mexican Government is currently concentrating its resources on ten major roads (see Table 22 and Map 21), sections of which have been privatised in the form of concessions.

From 1988 to 1994, concessions for 5 800 km (3 600 miles) of toll motorways were awarded at a price of US$15 billion. 700 km are currently under construction. 900 km are managed by a federal body, CAMINOS Y PUENTES FEDERALES

Map 21. ***Mexican road network***



Source: INEGI.

Table 22. **Major roads**

Major roads	Km	Modernised	Other
Mexico City – Guadalajara – Tepic – Mazatlán – Guaymas – Hermosillo – Nogales with the Lázaro Cárdenas and Tijuana branches	3 036	1 976	1 060
Mexico City – Querétaro – San Luis Potosí – Monterrey – Nuevo Laredo with the Piedras Negras and Reynosa branches	1 816	1 108	708
Querétaro – Irapuato – Leon – Lagos de Moreno – Aguascalientes – Zacatecas – Torreon – Chihuahua – Ciudad Juárez	1 610	1 293	317
Acapulco – Cuernavaca – Mexico – Tuxpan – Tampico – Matamoros	1 044	202	842
Mexico City – Puebla – Coatzacoalcos – Capeche – Mérida – Cancún with the Oaxacas and Chiapas branches	2 427	1 592	835
Mazatlán – Durango – Torréon – Saltillo – Monterrey – Reynosa – Matamoros	753	388	365
Manzanillo – Guadalajara – Lagos de Moreno – San Luis Potosí – Tampico	908	381	527
Acapulco – Cuernavaca – Puebla – Veracruz	446	344	102
Veracruz – Tampico – Monterrey	737	192	545
Transpeninsular – Baja California	1 738	200	1 538
Total	**14 515**	**7 676**	**6 839**

Source: Mexico *IMF/World Bank Special Edition,* September 1996.

(CAPUFE). These concessions represent approximately half of the roads on which traffic is densest.

The concession agreements specified maximum tolls and indexing procedures. In return the Ministry of Communications and Transport guaranteed a minimum flow of traffic and provided for a review of the concession period according to traffic trends.

Privatisation was supported by a three-stage institutional reform:

– decentralisation of administrative, technical and financial responsibility to states, for roads which were not under the federal aegis;

– decentralisation to local offices of operations under the aegis of the Ministry for Communications and Transport;

– strengthening of planning capacities at federal level.

These reforms, regarded as insufficiently clear, were not deemed to have been implemented satisfactorily.

Privatisation turned to bankruptcy for the licence holders, as a result of a combination of several factors, including lack of clarity in the contracts, poor route studies, incorrect traffic forecasts and construction cost overruns. Real costs exceeded budget costs by more than 50 per cent on average. The Cuernavaca-Acapulco motorway, for example, cost US$2.1 billion, more than twice the estimated cost. These factors were compounded by inadequate amenities (service stations, hotels, safety equipment) and high maintenance costs. The World Bank considers that the quality of estimates and of the technical studies on which traffic and cost forecasts were based fell well below the needs of such an undertaking. It also allocates a major share of the responsibility to state lending banks which failed to carry out the normal functions of conducting a detailed project review and assessment.

The government also agreed that the builders should also be managers. Overruns were therefore passed on to tolls, which were further inflated by other factors. Operators were anxious to amortise their investment quickly, fearing that they would be able to obtain short-term financing only and anxious to complete the undertaking before the government's term of office expired. This resulted in toll motorway concessions being reduced to 10-15 years. In 1995, before devaluation, the journey from Mexico City to Acapulco cost approximately US$63. Tolls were on average five to ten times higher than in the United States for comparable distances.

The profitability of these projects was seriously affected. The internal rate of return of toll motorway projects was 2 per cent, compared with a forecast rate of 26 per cent. Many operators whose debt was in dollars but whose income stream was in pesos faced grave financial difficulties.

Road privatisation also created financial problems for the states. Faced with excessively high tolls, hauliers preferred to use roads for which there was no charge. These roads deteriorated more quickly than would otherwise have been the case, generating higher maintenance costs that had to be funded from state budgets.

In early 1995 the government had to step in to support 48 of the 52 concessions in order to save the licence holders from bankruptcy, contributing the equivalent of 0.6 per cent of GDP. The concessions were extended from 10 or 15 years to 30 years and sections were grouped together under a single management structure. Plans are under consideration to ban heavy goods vehicles from the old road network. On 6 December 1995, the government cut charges for commercial vehicles by 60 per cent.

Initiatives were also taken to step up cross-border traffic. Since December 1996, Mexican and American trucks can operate in the border states. TMM (Transportación Marítima Mexicana) and JB Hunt have set up a joint venture to

provide door-to-door transport between Mexico and the United States. Contracts have been signed with Nissan and Volkswagen for automobile transport on both sides of the border. This type of business is expected to generate 30 per cent of TMM's earnings.

Conclusion: Although the cost to the federal budget in the short term has been high, privatisation will offer potential benefits to the border states but will also increase inequalities between states.

All the major roads involved in the privatisation projects lead to the border cities, either from Mexico City or from coastal roads. This pattern favours the border states. States on transit routes may benefit from spin-off effects. In the current climate of budget restraint, however, the disengagement of the federal government and the deconcentration of budgets towards the states could well make it more difficult to keep up the level of investment and maintenance for other parts of the road network, handicapping neglected regions and their economies.

PRIVATISATION OF THE RAILWAYS

The rail network, carrying 12 per cent of inter-city freight traffic and 2 per cent of passenger traffic, is regarded as Mexico's least efficient transport infrastructure (see Table 23 and Map 22). In 1990, the ratio "km of railway per million US dollars of GDP" was 90, two to two and a half times lower than the corresponding ratio for the other OECD countries. As with the road network, the problem is not so much one of density as of the low productivity of both equipment and labour.

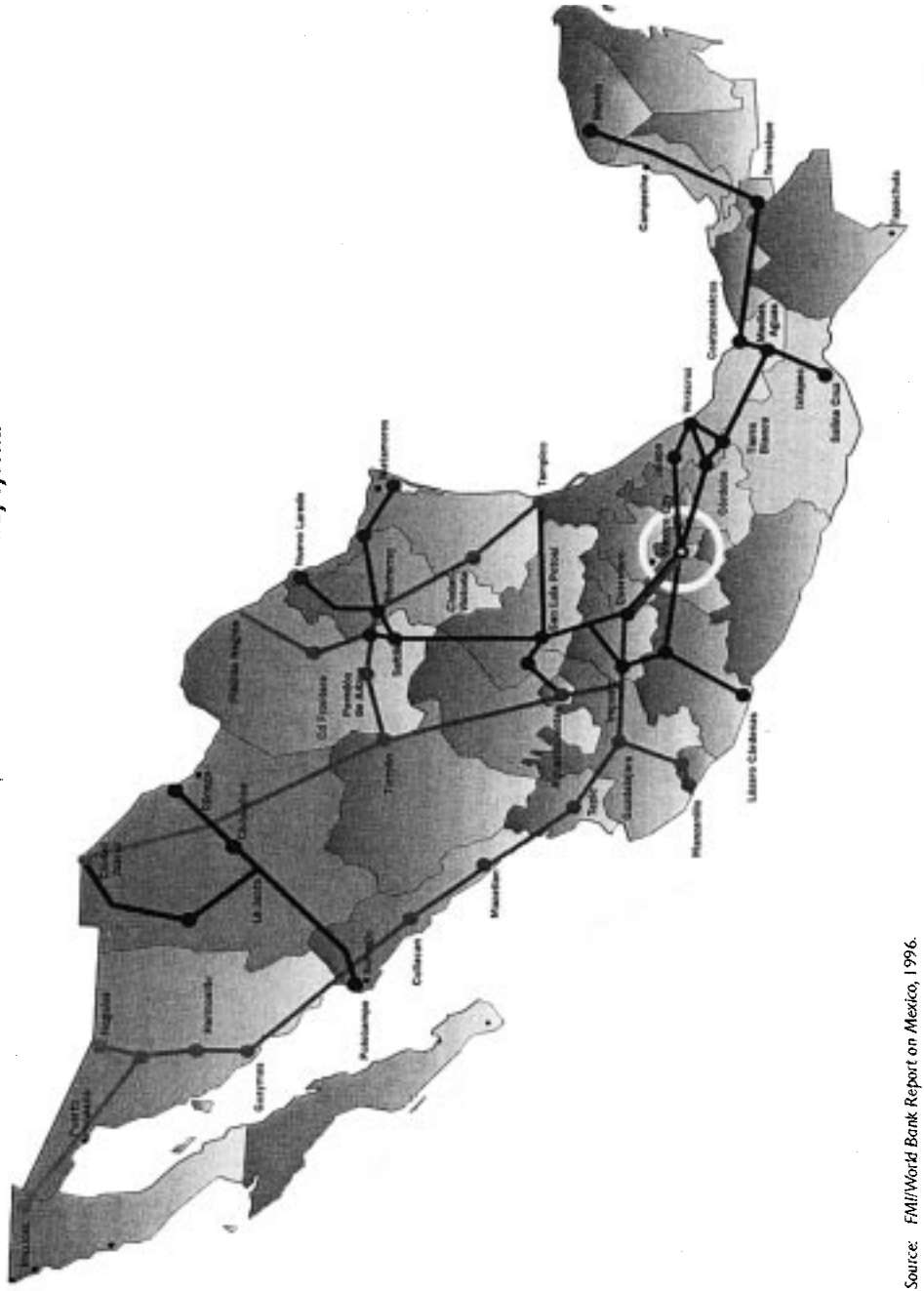
The poor condition of equipment is flagrant: in 1990, it was estimated that only 64 per cent of diesel locomotives were in operation, compared with a figure in other OECD countries of 80 to 90 per cent. The difficulties are compounded by delays, safety problems and the inefficiency of loading/unloading equipment.

Deregulation of the road transport sector led to a fall in the price of road transport and resulted in some traffic switching from rail to road. Rail traffic fell between 1985 and 1991. The losses of Mexico's rail operator swelled from 9.8 per cent of turnover in 1986 to 55 per cent in 1991.

In order to remedy these difficulties the Mexican Government decided to privatise the railways. Now that the necessary legislation has been passed, the government is defining the timetable and the conditions.

In order to pave the way, considerable changes have been made in the workforce and in labour relations. The company, which had 84 000 employees in 1992, renegotiated its employment contracts, providing incentives for voluntary redundancies and redeploying staff. The workforce has now been cut to 48 000

◆ Map 22. **The Mexican railway system**



Source: FMI/World Bank Report on Mexico, 1996.

Table 23. **The Mexican railway network in figures, 1994**

Main lines	20 445 km (40% of which is modern)
Branch lines	4 460 km
Private lines	1 540 km
Freight	53 million tonnes (15% of Mexico's total freight traffic)
Freight rolling stock	35 300 (of which 26 800 in use)
Locomotives	1 426
Passenger rolling stock	1 029
Employees	48 000

Source: Ferrocariles Nacionales de Mexico, FNM.

and a number of lines have been closed. Only 35 of the original 100 passenger lines now remain.

Main features of privatisation

The purpose of privatisation is to create regional companies on the basis of a zoning plan that is currently being drawn up. Investors will be able to choose from a wide range of concessions, including existing lines, the construction of new lines and the modernisation of rail infrastructure, notably signalling and telecommunications. The government is giving priority to efficiency (through the transfer of experience) rather than new revenue. Privatisation is due to take place in two stages so as to avoid a sudden flood of redundancies. Four regional networks are slated for privatisation:

1. North East (2,200 km of lines). This is the most important of the four regions since it includes major routes leading to the United States border. The main sections are Querétaro-Nuevo Laredo, Monterrey-Matamoros, Aguascalientes-Tampico.
2. South East, with 2,200 km of lines including major routes such as Mexico City-Veracruz, Mérida-Coatzacoalcos, Coatzacoalcos-Salina Cruz.
3. North Pacific, with 6,200 km of lines linking Guadalajara with Manzanillo, Tampico and Monterrey with Torreón and Irapuato with Ciudad Juárez. This is likely to be the first concession to be privatised.
4. Mexico City Valley, with a relatively small number of lines. This concession is likely to include interconnection services within the Mexico City metropolitan area.

More than half of Mexico's main lines will be privatised. Privatisation should make it possible to modernise equipment (the estimated cost of modernisation is

approximately US$2 billion), increase the railways' share of the freight transport market from 12 per cent to 18-20 per cent and develop connections with other transport modes. The division of the network into four large regions also means that territorial and environmental considerations can be taken into account more easily.

Expressions of interest were received from 174 groups when the privatisation plan was announced. Mexican candidates are likely to find it difficult to bid in isolation because of the fall in the value of the peso. Some have thus sought to form partnerships with shipping companies, while the possibilities of joint ventures with US companies should also make the operation more attractive.

US railway companies are likely to play a particular part because of the economies of scale which would make it possible to capitalise on the benefits from greater trade flows due to NAFTA. In 1994, Southern Pacific carried 176 000 loads of vehicles on either side of the border, generating 8 per cent of its turnover. Kansas City Southern Railroad has teamed up with Mexico's largest shipping company, Transportacion Maritima Mexicana. Union Pacific carries 55-60 per cent of all US freight with Mexico (Laredo, Brownsville, El Paso), traffic worth US$350 million in 1994, but management does not believe that growth can continue unless the infrastructure is modernised.

Legislation governing railway operations was passed at the end of 1996 but no timetable for the sale of the networks has yet been announced.

Conclusion: The operation gives greater consideration to regional consequences, but is a gamble that is not certain to pay off.

The division of the rail network into zones makes it possible to take territorial considerations into account. The parts of the network that link the Distrito Federal and its surrounding regions to the communication nodes between Monterrey and the border cities (Matamoros, Nuevo Laredo, Piedras Negras) are by far the most profitable. Better connections with the ports on the Gulf of Mexico (Matamoros, Tampico, Veracruz) may well help to revitalise the region.

The other border cities are served by less dense networks. US operators would also have preferred privatisation of the entire network and not just predetermined parts of it.

The poorest regions are served by only a single line, and privatisation will not affect some of them at all (Quintana Roo and Chiapas) even though they are among the least developed regions.

The candidates are concerned about ecological risks and accept no liability for any ecological damage caused by the national railway company before privatisation.

The candidates have also raised the issue of labour relations. Although the workforce has already been reduced by 41 per cent through redundancies and natural wastage, FNM still has three times as many employees as Southern Pacific. The cost of retiring more staff will without doubt be the subject of tough negotiations.

PRIVATISATION OF THE PORTS

With its 10 000 km of coastline, Mexico has 85 ports, 22 of them with international connections. Port traffic increased at an average annual rate of 2.3 per cent between 1990 and 1994, rising from 169 to 185 million tonnes, and growth in container traffic was particularly vigorous (14 per cent). Maritime transport accounted for 31 per cent of Mexican freight transport and 70 per cent of non-oil foreign trade. There are no capacity restrictions even though demand has grown strongly.

In 1991, 25 per cent of imports from the Pacific Basin entered Mexico via Los Angeles/Long Beach. Freight levels to American ports were often lower, with more frequent sailings, because of a higher volume of trans-Pacific trade to the United States. Moreover, foreign companies operating in Mexico report that losses and delays are much worse at Mexican ports. Small companies find it difficult to use port facilities because of inspection delays and procedures for non-containerised goods.

Restructuring in the sector began in 1989 when the ports, which had previously been under the aegis of a number of different bodies, were brought together under a single body, Puertos Mexicanos. Private sector involvement began in 1991, when the first concessions for handling services were awarded to private companies in which shipping companies had taken stakes.

New reforms introduced in 1993 provided for the concession of port administration to so-called APIs (Administracion Portuaria Integral) for a period of 50 years, the APIs then being able to concede port operations to private businesses. 17 APIs were created in 1995 and an umbrella organisation was set up under the aegis of the Ministry of Communications and Transport to co-ordinate the port authorities' activities.

The port authorities are commercial enterprises owned by state governments and municipalities. Shares in APIs[22] may be sold to private companies as long as they are under majority Mexican ownership. Each port is governed by a joint management committee bringing together central government, state government and private sector representatives. This system should help to increase co-ordination with other transport modes, to take better advantage of economies of scale and to gradually include regional and environmental considerations.

These reforms have gone hand in hand with the deregulation of dock work. Loading and unloading is carried out by private companies offering employment contracts under which wages are more closely linked to productivity. For example, productivity at the port of Veracruz doubled between 1991 and 1994.

The government considers the privatisation of the ports to have been a success. The private sector handles 80 per cent of container traffic, productivity has improved and costs have fallen.

The port of Veracruz

Veracruz is one of the largest of Mexico's ports (see Figure 15), accounting for 22 per cent of maritime freight transport and 39 per cent of container traffic. It is the leading port in terms of loading/unloading, handling 7 million tonnes of freight in 1994. The port's main activity is grain, and it handles 35 per cent of Mexico's grain imports. The grain is either transferred to storage terminals on special containers or loaded directly into wagons for transport by rail into the country's interior.

The privatisation of the port of Veracruz began in 1991 and the port authority was created in February 1994. The authority has implemented a development plan which calls for investment of US$200 million, with a high level of participation from the private sector. A project costing US$20 million is currently under way, designed to increase the port's area by 30 hectares, earmarked for container terminals.

Concessions have been awarded for operations relating to terminals and port facilities, including container terminals, container repair facilities, silos, cold storage facilities, rail goods terminals and other services, especially tourist services.

Intermodal connections have been made possible by the construction of a motorway linking Veracruz to Mexico City, cutting the journey time to four and a half hours, and the existence of a two-line rail link into the port area itself.

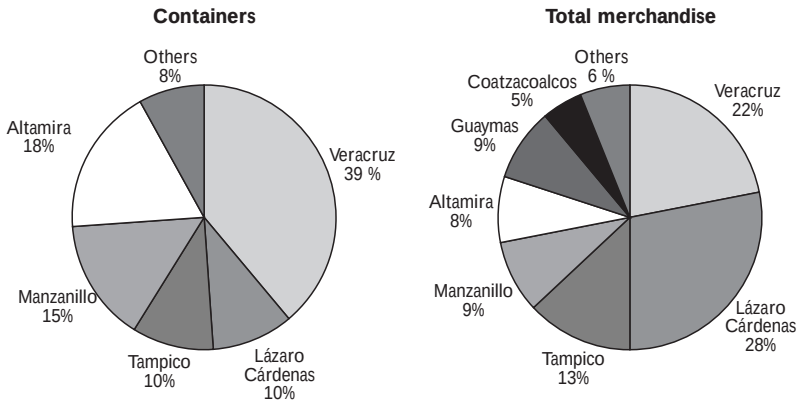
The effects of privatisation appear positive: activity at the port grew at an annual rate of 20 per cent between 1992 and 1996, and the port authority aims to triple the port's capacity from 7 to 22 million tonnes by 2000.

PRIVATISATION OF THE AIRPORTS

Mexico has the largest airport network in Latin America with 1 700 sites, though 7 airports handle 70 per cent of the traffic. Considerable investment is required as the volume of traffic increases and the government is planning to involve the private sector.

In line with the method used for privatising the ports, concessions will be awarded for the management of part of the 5 airports still run by the government.

◆ Figure 15. ***Markets share of the Port of Veracruz, 1995***



Source: Administración portuaria integral de Veracruz.

The process is likely to begin with the privatisation of medium-sized airports. The first airport to be privatised is Puerto-Vallarta. Three types of concession cover technical services (maintenance of runways and communications towers and safety services), ancillary services (baggage handling, fuel sales, ticketing) and commercial services (restaurants, shops). Concessions are due to be awarded for a 50-year period and foreign shareholdings are expected to be limited to 49 per cent.

Plans are currently being laid for the construction of a second airport serving Mexico City, since the present airport is expected to have reached saturation point by 2000.

NOTES

1. European Commission, Report of the Study Group on the role of public finance in European integration, 1977, Brussels.
2. A balanced budget is assumed, having the main characteristics of Mexico's federal budget in 1993, namely: revenues equivalent to 16 per cent of Mexican GDP, of which ¾ in tax receipts and ¼ in oil/petrochemical revenues – on the expenditure side, 50 per cent operating expenditures, 15 per cent investment, 15 per cent social welfare, and 20 per cent transfers to states and municipalities. Tax revenue is shared among the states according to degree of decentralisation, income from public enterprises proportionally to population, operating expenditure proportionally to the number of public servants, transfers and investment proportionally to federal participation, social welfare expenditure proportionally to infant mortality.
3. Enrique Cabrero Mendoza, Tendencias financieras y estrategias innovadoras en las haciendas municipales. Una aproximación metodológica para su estudio, in Enrique Cabrero Mendoza, Coordinador, *Los Dilemas de la Modernización Municipal: Estudios sobre la gestión hacendaría en municipios urbanos de México*. México, Miguel Ángel Porrua, octubre 1996, pp. 17-102.
4. Figures for local public finance are available only up to 1992 (El Ingreso y El Gasto Publico en Mexico, 1994 edition, INEGI, Mexico City, 1995).
5. See in particular: OECD, IND/WP6(87)5, The contribution of the different levels of government to regional development, Paris, and OECD, DSTI/IND6/88.13, Clarification of the role of the different levels of government in regional development and ways of harmonizing responsibilities, 1988, Paris.
6. Prud'homme, R., The Dangers of Decentralization, The World Bank Observer, Vol. 10, No. 2 (August 1995), pp. 201-220.
7. Heng-fu Zou and Hamid Davoodi, Fiscal Decentralization and Economic Growth, Working Papeer No. 680-02C, Policy Research Department, Public Economics Division, World Bank, 1996.
8. The bulk of local government revenue consists of *a)* transfers from the federal government (public debt and specific federal or intergovernmental subsidies recorded as ''occasional revenue''), *b)* duties that are not set locally, *c)* revenue from public enterprises, *d)* accounts receivable and cash in hand. The share of genuine local taxes is therefore very low (Table 18).

9. Just as the progressivity of a tax system is measured by the taxpayer's income/tax ratio, so the progressivity of a transfer system can be measured by the beneficiary's transfer/income ratio.

10. The actual formula and its evolution have been described by Rogelio Arellano Cadena in ''Necessidades de cambio en las relaciones haciendarias intergubernamentales en Mexico'', lecturas 83 México; Hacia un nuevo federalismo fiscal, Gobierno del Estado de Puebla, 1997.

11. The tax rate referred to here is in fact local tax as a proportion of GDP per inhabitant in the states.

12. A detailed critique of the institutional and financial problems of local management in Mexico and suggestions for improvements may be found in OECD (1997) Territorial Development Infrastructures in Mexico. A New Public Policy for Development. TDS. Paris.

13. This does not of course mean transferring federal taxes whose rate is set in Mexico City, which would be no more than disguised subsidies.

14. This programme does not exist anymore.

15. Between 1990 and mid-1992 privatisations brought in US$20.23 billion. US$13 billion came from the sale of retail banks and US$6.2 billion from the sale of the telephone company. The proceeds were used to reduce the public debt.

16. GALAL, Ahmed, JONES, Leroy, TANDON, Pankaj and VOGELSANG, Ingo (1997), ''Les effets de la cession d'entreprises publiques sur le bien-être général'', BIRD/Banque mondiale.

17. This resolution concerns as well those that public agencies must observe to justify the setting of new standards and requirements. All procedures and red tape are analyzed by the Economic Deregulation Council, which is made up of representatives from the public, entrepreneurial and labor sectors. In 1996, the Council revised and analyses the listing of standards and requirements needed to open and operate a business that had been set by 11 federal ministries, the Department of the Federal District and their corresponding agencies. Based on this analysis and deregulation measures already implemented, the Federal Registry of Business Formalities was compiled and published. Any new requirement or standard proposed by a regulatory agency must be revised and approved by the Council prior to being included in the Registry and going into effect. This will ensure that no unnecessary cost will be imposed on enterprises.

18. Banco de México, *op. cit.,* pp. 25-27.

19. Mexico Country Economic Memorandum, ''Fostering private sector development in the 1990s'', World Bank, 1994.

20. OECD/DAFFE (1996), ''Regulatory Reform: a Country Study of Mexico''.

21. The federal government has had to cut capital spending by 22.3 per cent despite a promise by the President to increase infrastructure investment by 25 per cent from the first year of his term of office.

22. APIs may lease the land under concession. The terminals at the four largest ports (Manzanillo, Lazaro Cardenas, Altamira and Veracruz) will be fully privatised.

Annex

A FRAMEWORK FOR TERRITORIAL DATA COLLECTION AND ANALYSIS[1]

Mexico is a federal republic of 31 States and a Federal district. In Mexico, regions are not administrative entities. They are geographical zones composed of an agglomeration of the basic administrative entities, *municipios* (communities). Thus on the basis of socio-economical criteria, 2 418 *municipios* have been regrouped into 209 regions. For each one, data are available regarding demography, education, health, income, infrastructures and security. Map A1 illustrates this distribution. None of the regions straddle two or more states.

International comparisons among subnational territories require statistical data that have to be assembled and provided on the basis of harmonised grids of territorial units, using common definitions. Depending on the analytical purpose, the grids should be more or less detailed. For assessing regional policies, large regions could be used if the main concern is to analyse broad imbalances within a country. The Mexican regional data has been integrated into the OECD territorial database by the Mexican institution INEGI in collaboration with OECD. This makes it possible to compare Mexican regions to regions of other OECD Member countries.[2]

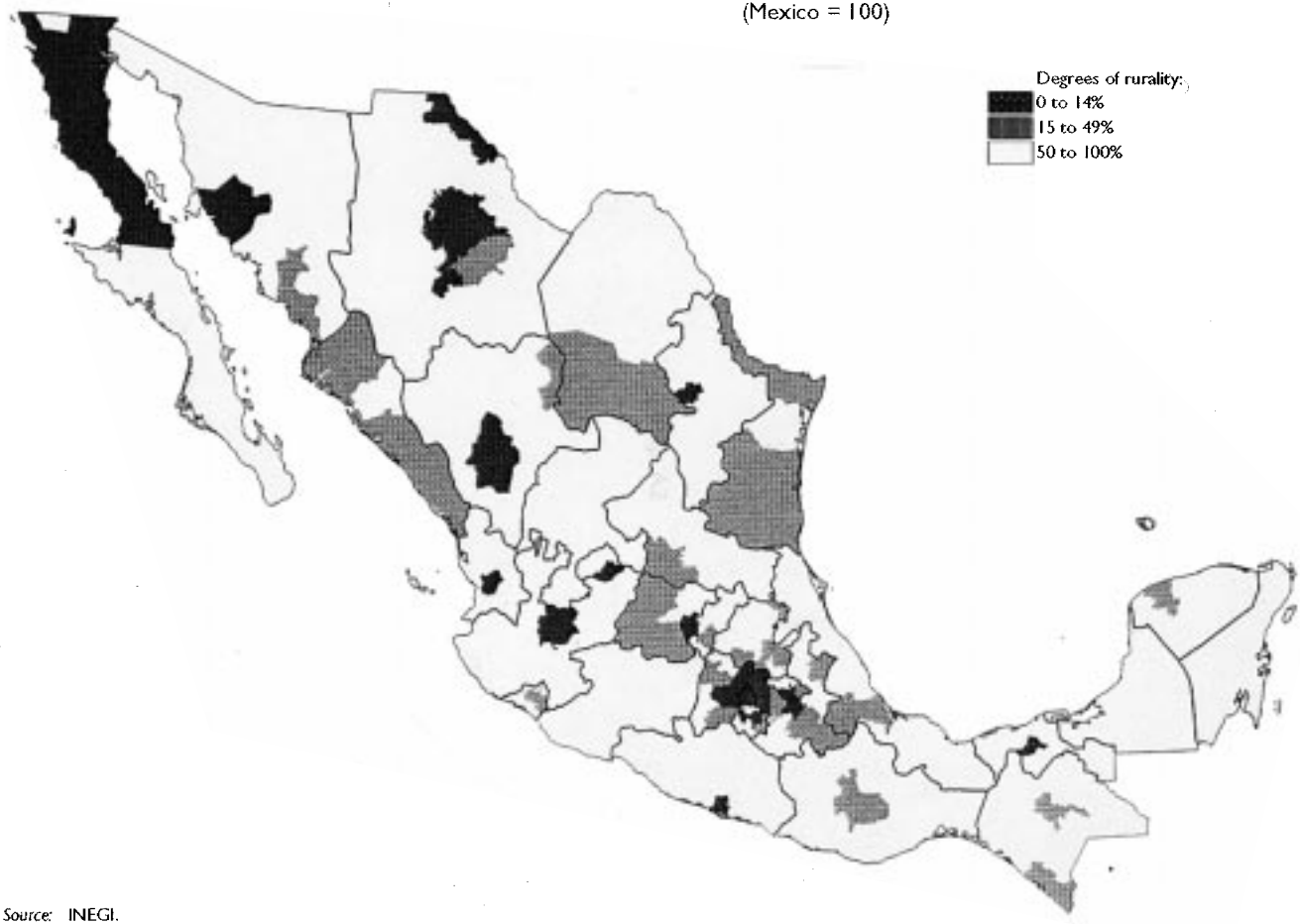
Table A1 shows the current distribution of the population in the OECD countries. For the OECD area as a whole more than a quarter of the population, or 240 million people, lives in predominantly rural regions, covering over 80 per cent of the entire OECD territory. On the other end of the spectrum, 345 million persons are concentrated on less than 5 per cent of the OECD territory, in the urbanised regions; the remaining third (275 million) is to be found in intermediate regions.

The importance of the different types of region varies substantially from one country to another. In most Scandinavian countries the bulk of the population lives in predominantly rural regions. In others, such as Belgium, Germany, the United Kingdom or Japan, the highest shares of the population are in urbanised regions. Other countries are characterised by a dual structure, with large

◆ Map A1. **Regional distribution**

Source: INEGI.

◆ Map A2. ***Mexico: Regional stratification by degree of rurality, 1980-90***
(Mexico = 100)



Source: INEGI.

Table A1. **Rural population in OECD Member countries, 1990**

Per cent of national population

	Population in rural communities[1]	Population by type of region		
		Predominantly rural	Significantly rural	Predominantly urbanised
Turkey	59/	58	30	12
Norway	59	51	38	11
Sweden	43	49	32	19
Finland	55	43	37	20
Denmark	42	40	38	22
Austria	42	40	39	22
Mexico	**41**	**38**	**24**	**38**
United States	44	36	34	30
Canada	40	33	23	44
Australia	30	23	22	55
New Zealand	49	47	25	28
Iceland	39	35	8	57
Ireland	43	47	15	38
Greece	37	42	24	34
Portugal	36	35	22	43
Czech Republic	29	15	57	28
France	37	30	41	29
Spain	30	17	46	37
Italy	22	9	44	47
Japan	27	22	35	43
Switzerland	19	13	25	62
Germany	21	8	26	66
United Kingdom	13	1	27	72
Luxembourg	30	–	100	–
Belgium	9	2	18	80
Netherlands	8	–	15	85

Note: – Not applicable.
Typology of regions according to the share of regional population living in rural communities:
Predominantly rural (PR), more than 50%; "Significantly rural" (SR), between 15 and 50%;
Predominantly urbanised (PU), below 15%.
Data for Hungary, Poland and Korea not available.

1. Population of local communities with population density below 150 inhabitants/km^2 (500 inhabitants/km^2 in the case of Japan).

Source: Territorial Data Base, Territorial Development Service, OECD.

proportions of the population at both extremes, in predominantly rural and in urbanised regions (Canada, Greece, Ireland and Portugal). In France, Italy and Spain the largest shares fall into the intermediate category. Mexico is predominantly rural: 41 per cent of the population live in rural communities. However, Mexico is also categorised as an OECD country with a high proportion of predominantly urban regions. Map A2 illustrates this situation.

NOTES

1. See ''Territorial Indicators of Employment'', OECD, 1996 and ''Employment is a territorial issue'' by Heino von Meyer and Philippe Muheim, the OECD Observer No. 203. December 1996-January 1997.

2. For rural-urban analyses in an international context, the OECD has developed a two tier approach, combining local and regional information. In a first step, local communities are classified as being either rural or urban. The defining criterion is population density, either below or above 150 inhabitants per square kilometre. Typically these communities are basic administrative units such as municipalities or districts. There are more than 70 000 of these local building blocks in the OECD area.

In a second step, the OECD procedure ranks small regions according to their degree of rurality (or urbanisation), defined as the share of the region's population living in rural communities. Ideally, the size of the regional units should reflect labour-market areas as described by commuting patterns. This means they are usually smaller than major administrative regions, states or provinces. To facilitate analyses, these 2 300 small regions of the OECD area are grouped into three types. Regions with a majority of people living in rural communities are called ''predominantly rural''. If less than 15% of the regional population live in rural communities, the region is considered ''predominantly urbanised''. Consequently, the ''intermediate'' regions have rural population shares between 15 and 50%.

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