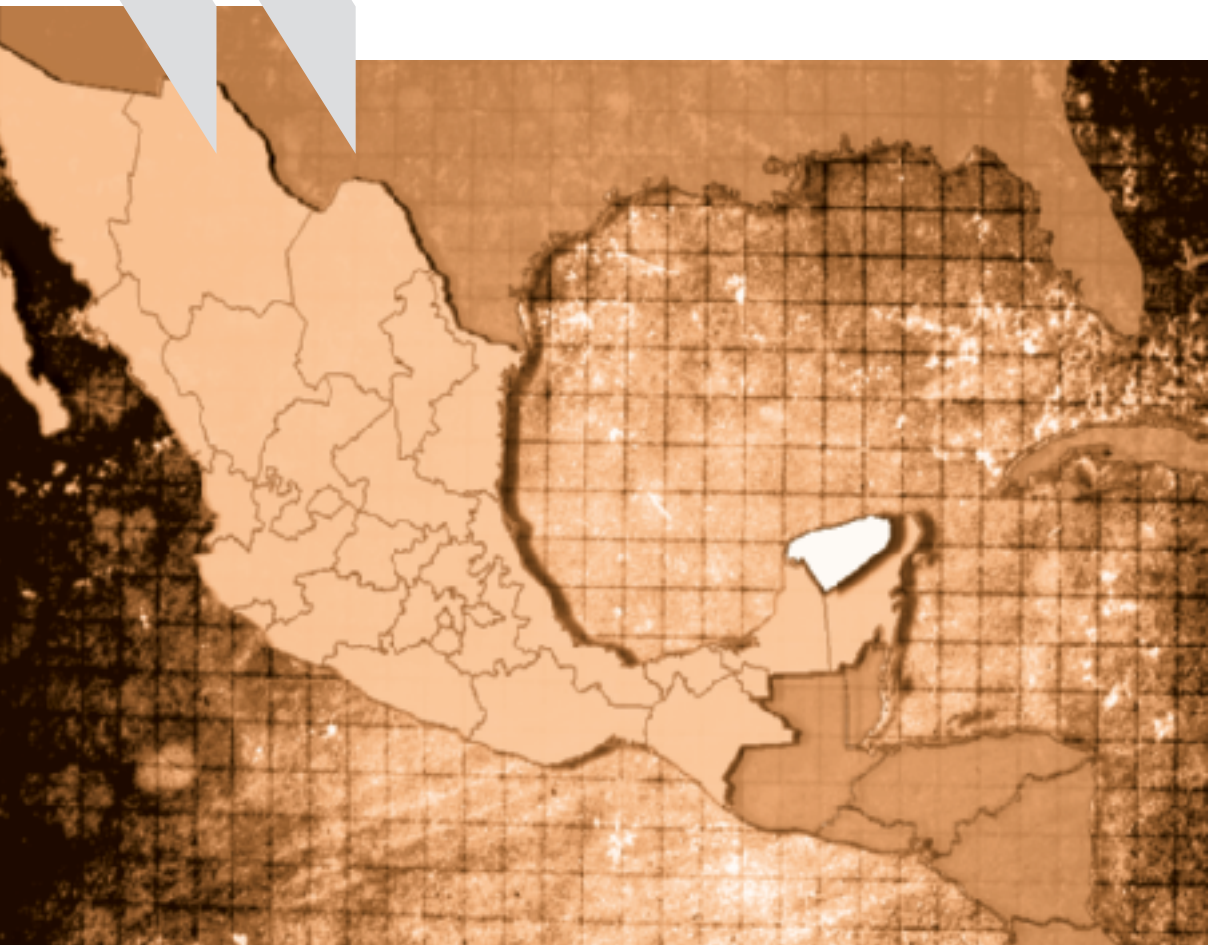
OECD Territorial Reviews

YUCATÁN, MEXICO



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FOREWORD

OECD regions whether successful or lagging are trying to strengthen their competitive position in an increasingly globalised economy. Although economic differences across OECD regions persist, growth has been solid in a group of lagging regions. Understanding the conditions, policies and institutional arrangements that have spurred higher growth rates in those types of regions is essential to shed some light on the policies and governance structures that lagging regions should pursue.

Responding to this need to study and spread innovative territorial development strategies and governance in a more systematic way, the OECD created in 1999 the Territorial Development Policy Committee (TDPC) as a unique forum for international exchange and debate. The TDPC has developed a number of activities, among which a series of specific case studies on metropolitan and rural regions in addition to the study of territorial policy at the national level. This particular review follows on the heels of the Territorial Review of the Mesoamerican Region (Southeastern Mexico and Central America) by trying to deepen our understanding of this part of the world where some lagging yet dynamic regions can be found. The review follows the standard methodology and common conceptual framework used in other territorial reviews which will allow for comparisons across countries.

ACKNOWLEDGEMENTS

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ASSESSMENT AND RECOMMENDATIONS

Lagging but dynamic regions are producing regional convergence in the OECD; Yucatán is among the fastest growing regions in the OECD

OECD regions have been converging and the process has been driven by lagging, yet dynamic regions. Despite robust growth in lagging regions has not been enough to reduce disparities there is a process of catching-up. It is important to identify the policies that have led to such dynamism in order to spur growth in underperforming regions. Yucatán is among the 10 fastest growing regions in the OECD, but is also a lagging region even in the Mexican context. In contrast to the trend in OECD countries, Mexico has experienced a process of regional divergence fuelled by human capital upgrading.

A strategic location that has not been seized to the fullest and closer ties with the Mesoamerican region should be sought

Yucatán is strategically located within a growing and relatively prosperous region. Mérida is currently the commercial and services hub of this region. The state's location is also advantageous with respect to the greater Mesoamerican region, including areas of Central America, the Caribbean and the southern United States.

Better infrastructure, climate, and location, as well as Mérida's relatively well-educated workforce, are among the several distinct comparative advantages that the metropolitan area enjoys relative to the rest of the Yucatán Peninsula and the Mesoamerican region. Its location and infrastructure offer a clear opportunity to serve as a key logistics, distribution, and processing point for parts of Central America, southern

Mexico, the Caribbean, and the United States. These logistics and processing activities are desirable because they generally exhibit relatively high levels of productivity.

With many Chinese, Brazilian and Central American products being transported by boat, distance to the market becomes an important factor. Yucatán is only a few hundred miles away from Florida and makes it a strategic location not only for manufacturing transport to the USA, but also to Central America. However, despite improved infrastructure, port efficiency in Progreso is low and declining. Competitive shipping costs imply appropriate infrastructure, timing and port efficiency are crucial to enhance trade opportunities and investment. Lowering shipping costs through improved infrastructure efficiency could boost trade and investment in Yucatán.

The prospects of reaping the benefits of logistics in Yucatán however, are subject to undertaking the necessary steps to develop a multimodal transportation system. Moreover, a logistics hub will imply the development of services around it to guarantee delivery times, regularity and frequency of services and direct service without transhipment or warehousing en route. Particularly needed is a regional air carrier to facilitate the movement of tourists throughout the Peninsula efficiently and greater integration of port facilities in Progreso within the regional transportation system. The logistics platform is expected to provide an opportunity to expand the scale of port operations.

Higher value-added activities related to design and engineering can improve the state's competitive position

The importance of upgrading activities to higher value-added processes have been emphasised by the recent decline in manufacturing activities and the limited capacity of primary activities to reach international markets. Opportunities still open for labour-intensive activities such as textiles by including design in their processes. Likewise, innovation is also required in primary activities not only to help improve productivity, but also to ensure minimum environmental impact. An incipient number of experiences in Yucatán have started to underlie the importance of innovation and such good examples can be found in information technologies and tropical fruits farming.

Yucatán is a land of contrasts

Yucatán is a region of contrasts: a lagging but growing region; offering high quality of life and vast natural resources, but problems of sustainability; with tourism attractions in rural areas that so not benefit from them; with medical services not only for the state but for the Peninsula, yet health-services coverage is concentrated; a centre for higher education in the Peninsula whose graduates do not find jobs; with a number of marginalised communities in fragmented administrative bodies; a Peninsula sharing a common cultural heritage and attractiveness, where institutions do not co-operate.

It offers high levels of quality of life and vast natural resources, but faces serious challenges regarding sustainability

Quality of life is one of Yucatán's primary advantages due to abundant coastal and water resources, numerous cultural and tourism destinations, extensive physical infrastructure, attractive year-round climate, quality service providers, including education and health care, low levels of serious crime, high levels of satisfaction, and a fair degree of social cohesion. However, quality of life in the medium to long-term is threatened by several environmental problems, including toxic waste and coastal pollution, noise and air quality. A number of economic concerns, related to the issue of equity, also jeopardise social cohesion and livelihoods, including low wages, lack of employment in the formal economy, and low levels of tax collection.

Probably the greatest challenge concerning sustainability lies in water treatment and provision of sewage in Yucatán. Water resources in the state are being polluted by both human and economic activity. Yucatán lacks sewage, a proportion that is nearly twice as much as the national average. Yucatán holds the 5th place in the country when it comes to infectious intestinal diseases. In addition, nitrates in the state's water resources have exceeded official standards since 1987. As polluted water reaches the sea, the algal bloom or "red tide" has been having economic costs for fishing of around 6 million USD a year. Water treatment should not only be directed to human residuals, but also to address pollution by intensive farming. Although the bulk of residual water is generated by human action, intensive farming –particularly pork production- entails more than twice nitrogen than human waste.

Communities are so dispersed that there is seldomly the critical mass to provide public services such as sewage, water treatment or waste collection. The state generates 130 000 tons of waste per year that due to lack of collection end up polluting land or in the sea. Although water treatment and waste disposal are municipal attributions, a wider, more comprehensive policy framework should address this concerns as the size of communities and municipalities prevents them from tackling this issues alone; all the more so, if the impact is felt in other communities.

…with tourism attractions in rural areas that do not bring about local benefits

Yucatán provides a diverse array of tourism offerings, including archaeological sites, beaches, eco- and adventure tourism, colonial cities, arts and culture. Moreover, several tourism-related industries are among the greatest job generators and most productive sectors. Despite the state receives more than 1.4 million tourists a year, it has not fully seized tourism opportunities. In order to diversify tourism and attract a greater share of international tourism, policymakers in Yucatán should consider re-prioritizing and reallocating financial resources to create the necessary infrastructure in a limited number of rural areas, which offer a diverse array of potentially viable tourist attractions. The case of Valladolid provides an example.

…where health coverage stretches to service the three states in the Peninsula, but at the same time is heavily concentrated

Yucatán has become a medical hub for the whole Peninsula, but access to health services is concentrated in a handful of municipalities. Although higher education and health care do not display particularly high levels of value-added per worker, these sectors are likely to grow substantially in the coming decades. Relative to its neighbours in southern Mexico, Mérida is well positioned in this regard with highly trained medical personnel and university faculty. In addition, infrastructure is in place in both sectors to meet future growth, with at least four first rate hospitals and more than a dozen major public and private universities.

Given Mérida's strengths in tourism and health care and its strategic location, one potentially viable strategy is medical tourism. The health care

sector is actively attempting to improve infrastructure by increasing the number of hospitals in rural areas. Mérida boasts an ample pool of well-trained physicians and specialists and several first-rate hospitals. Medical care is one of the few sectors in Yucatán that displays effective collaboration between government, the public sector and universities. Unfortunately, co-operation largely appears to be informal, based on social capital and has not been sufficient to offset high levels of concentration of medical services chiefly in Mérida.

Yucatán is a centre for higher education for the Peninsula, but its graduates are having a hard time finding jobs

Despite Mérida has also become the Peninsula centre for higher education, there are clear mismatches between qualifications acquired in schools and those demanded in the labour market. The majority of the state's labour force is comprised by primary-education level workers. Unemployment is precisely more acute among the young and educated, partly reflecting the mismatch of careers studied and demanded, but also the possible overcrowding of some degrees such as management, accounting or marketing. In contrast, the demand for technicians and engineers is not being met. If firms are in need of technical staff or trained personnel they are likely to find it almost exclusively in Mérida, as the state prepares as much as two and a half times more university-degree professionals than technicians, the bulk of them, concentrated in the capital. It is necessary that mechanisms co-ordinating efforts by higher education institutions, the private sector and the state government are introduced in order to improve the chances of graduates ending up with a job in addition to being coherent with cluster-policy objectives in IT and other fields.

There is a possible risk of further polarising society through education. While there are an increasing number of students enrolling in high-schools and universities, elementary schools' enrolment has been consistently declining. The possible social division that access to high-school and university level education may bring about is aggravated by the concentration of such degrees in Mérida. Although concentration of tertiary education is a common feature in OECD regions, Yucatán displays standards beyond any OECD country. It is important to highlight that while regional growth in Mexico has been fuelled by human capital formation, in Yucatán the benefits of such education are almost exclusively present in Mérida's functional area.

Although Mérida boasts several prominent institutions of higher learning and a fairly well educated population, government statistics belie an important weakness of the educational system –a serious lack of employment in the formal economy for high school and college graduates. As in other areas of Mesoamerica, business leaders identify a serious mismatch between educational supply and the competencies needed for success in the labour market. One potential alternative is for universities to collaborate more closely with business and industry in revising curricula and restructuring and developing academic programmes. The case studies of the IT sector in Costa Rica and the *Universidad Tecnológica Metropolitana* offer possible models.

with a number of marginalised communities in fragmented administrative bodies

The concentration of population and activity in Merida and the dispersion of the rest of the inhabitants in smaller sometimes remote communities have impinged on the level of marginalisation and human development in the state. More than three-quarters of municipalities in Yucatán display high or very high levels of marginalisation. In fact, Yucatán is considered a state with high levels of marginalisation entailing inadequate housing, lack of basic services such as sewage and low wages. Nearly one-quarter of housing in the state do not benefit from in-house sanitary facilities and most of the state lacks sewage. Similarly, family income is lower than 8 USD per day and illiteracy rates are among the highest in the country. The situation is aggravated by the difficulty of providing services to a myriad of small communities in different municipalities throughout the state.

Although the state has invested in infrastructure, private investment has not been lured

Investment in infrastructure has been spurred primarily at the federal level as part of the *Plan Puebla-Panamá*, which seeks to promote greater economic co-operation and competitiveness within the Mesoamerican region. The basis for the enormous investment in infrastructure is Yucatán's strategic location in the Mesoamerican region and its potential as a trans-shipment location and distribution centre for Central America, the Caribbean and other areas of the Americas. Policymakers have also addressed equity by targeting infrastructure investment in *municipios* with high levels of marginality.

However, private investment is meagre in almost all economic sectors in Yucatán. In part, is a reflection of the disassociation of public and private investment in Mexican states. Yet, it also reflects the difficulties to be an entrepreneur in the state. Whereas, in many countries, SMEs not only create a large proportion of new jobs, but also generate a pool of entrepreneurs who can take risks and invest, in Mexico, entrepreneurship faces numerous obstacles. First, entrepreneurship is mostly a family activity; businesses are passed on from generation to generation and limited amount of spin-offs and start-offs take place. Second, only a small minority of SMEs has access to credit from the banking sector; thus, the majority of firms finance business creation or expansion through the informal economy. However, access to credit, even through informal sources is highly uneven. Although financial-support policies may be sought by the state and federal governments, there is no substitute to savings' capacity.

Indeed, public investment in Mexico has not influenced private decisions of investment. Federal public investment is rightfully allocated to social targets to compensate poorer regions for lagging income, but it has not been effective in luring private investment into particular regions. Not only is public investment unrelated to private investment growth, but social infrastructure has not been enough to reduce regional disparities in Mexico. While equity is desirable, compensation mechanisms might be necessary but not sufficient to close the inequality gap. Yucatán spends more on public works and social infrastructure than other states in Mexico. Yet, a large share of its resources is spent in administration and the amount transferred to the municipalities is insignificant.

...leading to a large informal sector

Lack of opportunities even for those with education and the difficulties of being an entrepreneur have resulted in a large informal sector. The informal economy is a persistent problem that current regulations tend to reinforce. Informal activities in the state represent half of the economy and despite the numerous efforts to 'formalise' informal businesses, unfair competition from other informal businesses, as well as red tape increase the cost of doing business; hence, many businesses choose to go informal again. Although the state government has proposed to use programmes to foster formalisation of the informal economy, better regulation, cutting red tape and providing employment opportunities and access to formal credit are measures that could have a greater impact in the case of Yucatán.

Yucatán has started to separate planning from politics, but furthering civil society's participation, creating a career civil service and building a common vision for the state are unfinished tasks

At present, at both metropolitan and state levels in Yucatán, planning and policymaking are synonymous. Policymakers must accept the fundamental distinction between planning, which refers to medium and long-term decision-making to ensure and improve quality of life, and policymaking, which corresponds to a political process of implementing programmes or initiatives that respond to specific planning needs. In order to separate the planning process from policymaking, government officials in Yucatán should establish a career civil service system that oversees planning. In addition, the planning process should be carried out in participatory fashion (with representation of government, civil society, the private sector and universities) and perhaps by means of a trust or quasi-governmental agency with substantial autonomy and political independence.

The State Government has sought citizen participation for local planning processes through such mechanisms as the *Infrastructure Council* and the *Budget Council*, which are made up of non-government players. In order to consolidate these institutions and have a larger and more adequate framework of action, an initiative has been sent to the local Congress proposing a new State Planning Law. This law initiative seeks to adopt long-term programmes, besides promoting social participation change. This piece of legislation if approved could also contribute to improve the institutional framework in the state.

It is important that the planning process in Yucatán shifts away from sectors and into regions, as well as from top-down to bottom-up approaches. Planning in Mexico has traditionally been done –and Yucatan has clearly imitated this practice- sectorally; that is, planned through administrative areas and not territorial ones. As a result, policy objectives are set out with sectors in mind and not with communities in mind. Similarly, planning has been done at the state government with little inputs from the regions and the citizens. However, there are signs that that situation has started to change in Yucatán with new initiatives and institutional arrangements in place.

The fundamental challenge for improving regional competitiveness and social cohesion in Yucatán, as voiced by stakeholders in government, the private sector, and civil society, is the lack of a shared, coherent long-term vision for the state. In essence, the OECD's policy recommendations can only be part of a larger strategy to produce a fundamental transformation of

policymaking and governance in order to develop a collective vision of the state's future. Ideally, policymakers and government officials should implement the vision of Yucatán's future within the context of a 15 or 20-year plan.

Intergovernmental co-operation is hindered by a number of cultural and institutional factors

Inter-governmental co-operation at the *municipio* level in Yucatán confronts several serious challenges. Major concerns include a lack of fiscal autonomy, a need for legislative and regulatory reform, and lack of horizontal and vertical co-ordination among political units. In addition, collaboration is impeded by a number of cultural and institutional factors, including lack of long-term strategic planning, inefficient municipal organisation (too many *municipios*), and a lack of planning tools for decision-making and evaluation.

The lack of vertical and horizontal co-operation in Yucatán is determined by rigid and bureaucratic legislative and regulatory frameworks. However, many existing state and municipal policy measures replicate this inflexibility. To the extent possible, policymakers should use state government resources to break this cycle of inflexibility, providing financial incentives to encourage co-ordination and collaboration among municipalities on trans-boundary issues or provision of public goods and services.

The future of Yucatán will be determined by its ability to co-operate at the Peninsula level with other states

Despite a shared culture and interests, institutional co-operation at the state-level in the Yucatán Peninsula has been hampered for a number of reasons. Each state depends greatly on federal resources and is restricted in their ability to pool and manage such resources collectively. In addition, planning and development projects are closely linked with three and six-year electoral cycles, which are short-term and do not coincide in the three states. Finally, in spite of close ties among the three states, some level of competition exists particularly with respect to economic development activities such as tourism and fishing. Paradoxically, tourism is the one area in which inter-regional co-operation may yield the most obvious economic benefits for Yucatán and neighbouring states.

Several potential opportunities exist for collaboration among the three states that comprise the Yucatán Peninsula. To date, some collaboration has taken place on an informal basis, particularly with respect to resource management and public health issues. According to state government officials, other areas include tourism, fishing, logistics and conservation of natural resources. Another very concrete area is a branding strategy for tourism.

To sum up

A cursory inspection of regional social and economic indicators reveals only marginal improvement during the past six years. However, this apparent lack of tangible progress in promoting economic development is somewhat misleading. State government officials in Yucatán have carried out a wholesale reform of the policy and institutional frameworks that regulate planning, economic development, public administration, and land use. These institutions, which are expected to improve the state's competitiveness and the quality of life of its residents, should be considered policymakers' most important contribution to social and economic development in Yucatán.

Chapter 1
Opportunities and Challenges for Development

Introduction: The Need for Strategies for Lagging Regions in the OECD

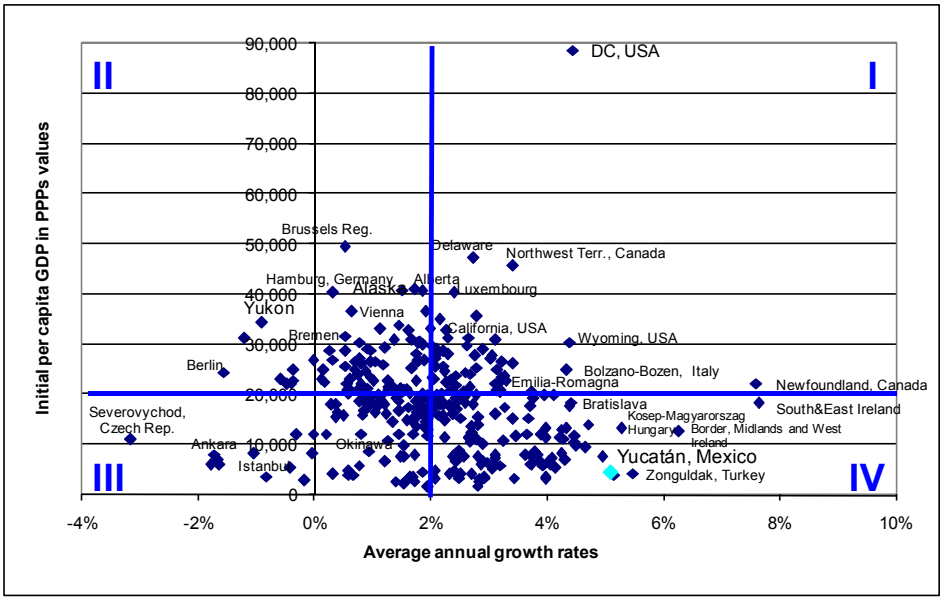
Types of regions and stages of development

OECD regions show diverse economic performance and income. Despite the OECD groups 30 of the most developed economies in the world, regional performance and development is far from homogenous. An analysis of the 324 TL2 regions in the OECD reveals that there are at least 4 types of regions based on their performance.[1] The first type that can be identified is the rich and performing group of regions among which DC, Delaware, Wyoming or California in the USA, Luxembourg, Bolzano-Bozen and Emilia-Romagna in Italy, or the Northwest Territories or Newfoundland in Canada which not only have incomes above the OECD average but also outstrip the mean in terms of growth (See quadrant 1 in Figure 1.1). The second group is comprised by rich but underperforming regions among which Brussels in Belgium, Hamburg and Bremen in Germany, Vienna in Austria, Alaska in the USA or Alberta in Canada which have an above-OECD-average income but have been growing slower than the OECD average (See quadrant II in Figure 1.1). The third type can be described as lagging and underperforming regions which not only have below-OECD-average incomes, but also have been growing slowly such as Okinawa in Japan, Istanbul and Ankara in Turkey, Berlin in Germany or Severovychod in the Czech Republic (see quadrant III in Figure 1.1). The fourth group are lagging regions that have been dynamic and in many cases the fastest growing regions in the OECD such as Bratislava in the Slovak Republic, Kosep-Magyarorszag in Hungary, the Border-Midlands-West and Southern and East regions in Ireland, Zonguldak in Turkey, or Yucatán in Mexico (see quadrant IV in Figure 1.1).

The positive performance of lagging but dynamic regions (group IV) can be related to a process of regional convergence in the OECD. Although the gap between the richest and the poorest regions in the OECD has slightly widened during the 1995-2003 period (Table 1.1), there is a process of catching-up from lagging regions to richer ones spurred by very dynamic growth rates in the former.[2] Although convergence of the second form – poorer regions growing faster and catching up with richer ones – tends to produce convergence of the first type (reduction of the dispersion), external shocks in poorer regions in countries such as Turkey, Mexico or the Czech Republic may have offset the convergence process and produce instead dispersion (Barro and Sala-i-Martin, 1995).

Figure 1.1 **Income and Growth in OECD Regions**

Average annual growth rates and per capita GDP in PPPs at the initial period level



Average annual growth rates were calculated for the 1995-2004 period for Australia and Korea; 1995-2001 for Mexico and Turkey; 1995-2002 for Norway; 1997-2004 for the USA; and 1995-2003 for all other countries.

Initial per capita values were expressed in PPPs to allow for comparability but based in current prices using the year in which the series began for each country as explained above.

For the Polish regions of Mazowieckie and Slaskie, as well as for the Spanish regions of Cd. Autónoma de Ceuta and Cd. Autónoma de Melilla, the 2000-2003 period was used to calculate average annual growth rates.

Source: Own calculations based on OECD (2006c) Regional Database

Table 1.1 **Sigma Convergence in OECD Regions**

Regional (TL2) per capita GDP in PPPs

	1995	2003
δ-convergence	0.6687609	0.674808

Initial and final years for Australia and Korea were 1995 and 2004; for Mexico and Turkey initial and final years were 1995 and 2001; for Norway 1995 and 2002; for the USA 1997 and 2004; 1995 and 2003 for all other countries.

Source: Own calculations based on OECD (2006c) Regional Database.

Table 1.2 **Beta Convergence in OECD Regions**

	Unstandardised coefficients		Standardised coefficients	
	B	Std. Error	Beta	t
(Constant)	0.052529596	0.011424		4.5982**
ini95	-0.00331526	0.001186	-0.153981	-2.7964**
R Square	0.0237			
Adjusted R Square	0.0207			

**/ Significant at the 99% level.

Source: Own calculations based on OECD (2006c) Regional Database.

A common agenda

It is important to study lagging and dynamic regions which have been producing the process of convergence experienced in the OECD and to understand the policies that have led to such dynamism in order to spur growth in underperforming regions. The OECD has not only focused in analysing mainly richer regions (e.g. Milan, Stockholm, Helsinki, Montreal) as the study of lagging regions has recently started (e.g. Newcastle, Istanbul). Among lagging regions, Yucatán is among the 10 fastest growing regions in the OECD; thus, the Yucatán case is not only important for its implications for lagging regions, but also as a fast-growing regional

economy (such as regions in Ireland, or the Italian regions of Calabria or Sicilia). The case of Yucatán will therefore help understand the policy agenda for growth in lagging regions in the OECD which has been fostering convergence.

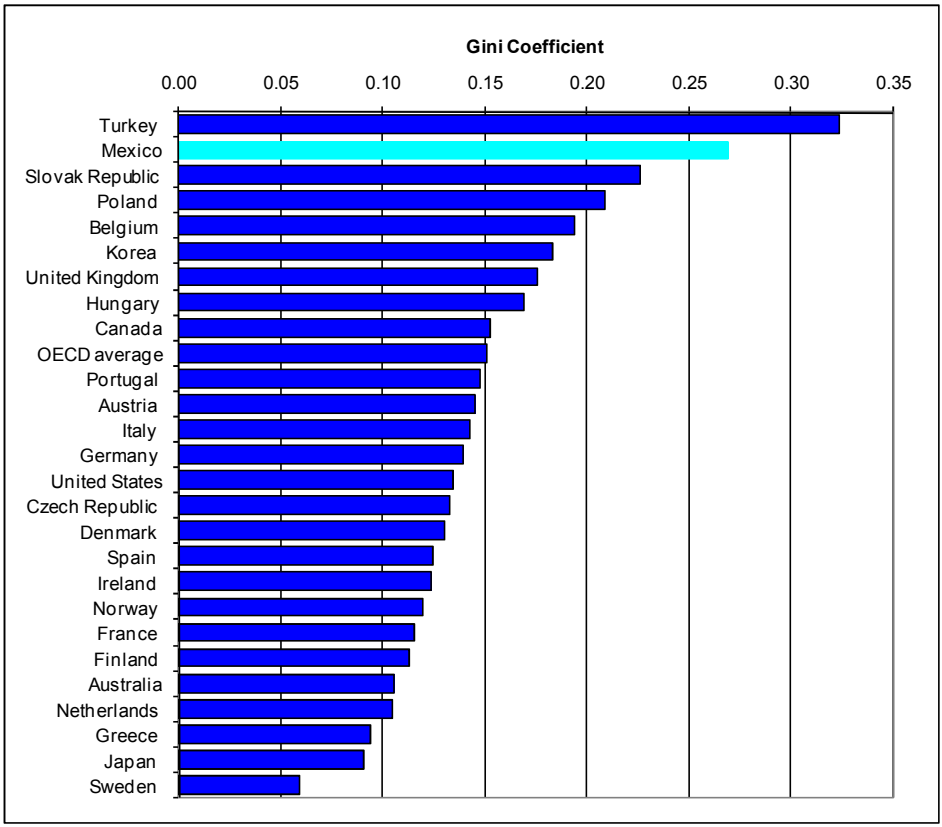
Growth trends in Mexican States and Yucatán

Although regional disparities in the OECD have entered a process of convergence, regional disparities are large within countries. Territorial inequality differs widely among OECD countries with European countries, Japan and Australia showing lower levels of imbalance, whereas Turkey and Mexico display the greatest inequality levels. Indeed, Mexico's Gini coefficient stands at 0.27 (Figure 1.2). What is more, studies on regional inequality have been found that disparities have exacerbated particularly after NAFTA (Sanchez-Reaza and Rodriguez-Pose, 2002; Chiquiar, 2005).

Growth in lagging regions in Mexico has therefore waned after GATT, but particularly after NAFTA as new opportunities for trade and industrial development have been seized in Northern states closer to the US market. However, some Southern states such as Tlaxcala, Morelos and Yucatán have managed to grow fast during this period. It is particularly important to note that the greatest growth rate in the entire South-Southeast is experienced in Yucatán (Figure 1.3).

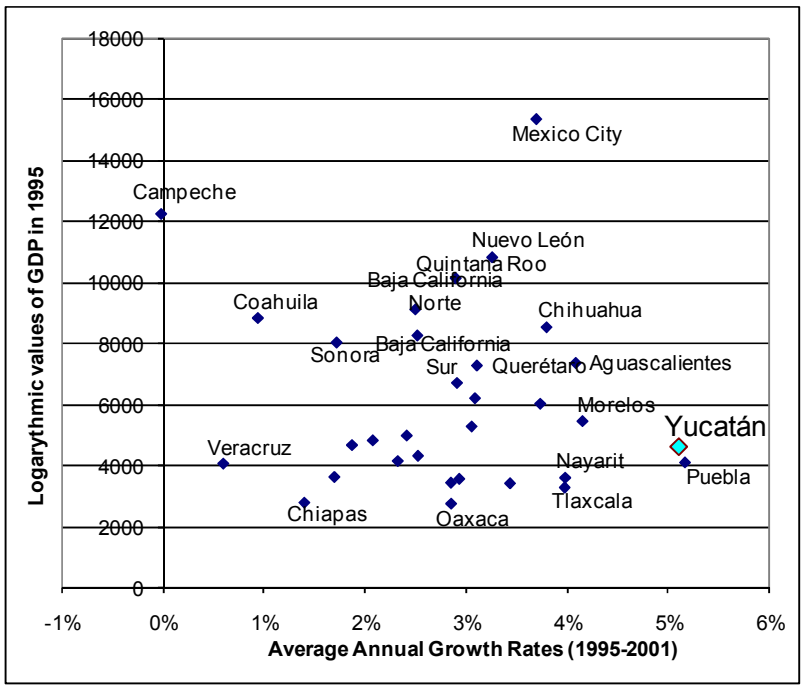
Figure 1.2 **Regional Disparities in the OECD**

Gini Coefficients for OECD Countries



Source: OECD (2005) Regions at a Glance.

Figure 1.3 **Growth and Income in Mexican Regions**



Source: Own calculations based on OECD (2006c) Regional Database

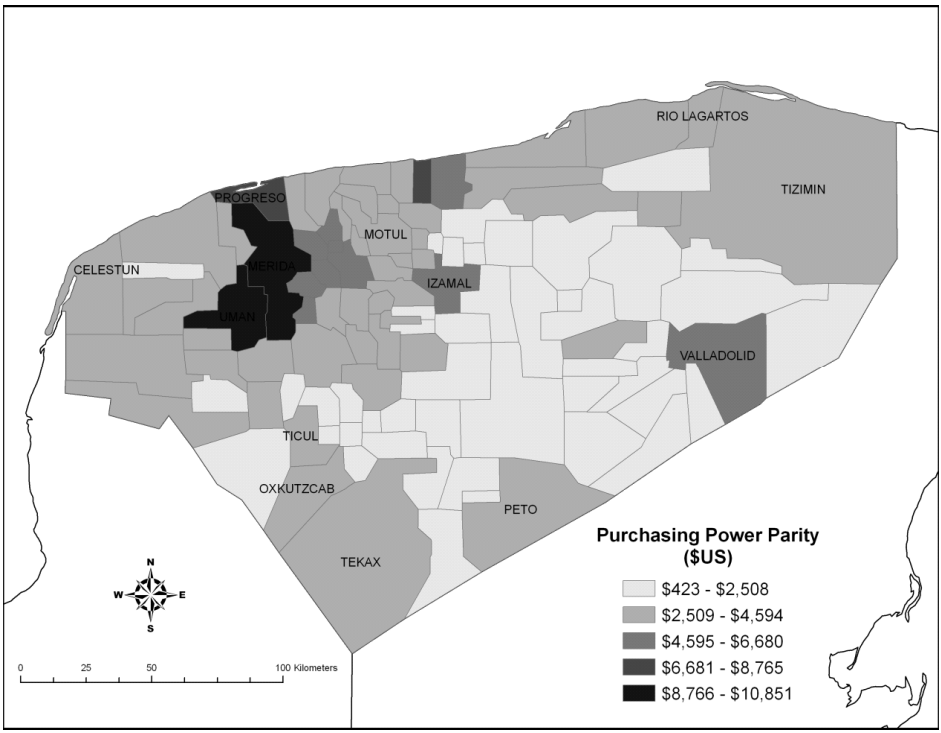
A lagging region in Mexico

Equity has been the primary focus of economic development policy in Yucatán for more than a decade. The 1995-2001 State Development Plan, for example, identified the excessive concentration of economic activity in Mérida, the state capital, as the primary cause of disparities in income, employment and economic opportunity and sought to achieve "balanced sustainable regional development" by channelling export-oriented industrialisation to rural areas (Gobierno del Estado de Yucatán, 1995). The most recent State Development Plan, for the period 2001-2007, attempts to promote diversification and regional integration in order to distribute the benefits of economic growth more equitably and reduce persistent social and regional disparities (Gobierno del Estado de Yucatán, 2001). The emphasis on equity is prescient in that the complementary relationship between competitiveness (efficiency) and social cohesion (equity) has recently been

reiterated by OECD and other multilateral organizations including the World Bank (2007b).

Figure 1.4 **Per capita GDP in Yucatán**

by municipality in PPPs



Source: CONAPO (2000a)

Notwithstanding urban poverty, equity is primarily an urban-rural issue in the case of Yucatán, in which the capital city (Mérida) accounts for 42% of state population, more than 60% of employment in the formal economy, and more than two-thirds of gross regional product (BANXICO, 2006). The functional area of Mérida that includes the municipalities of Conkal, Kanasín, Mérida, Ukú and Umán, are higher than any other municipality in the state (Figure 1.4).

Low levels of social and economic development in Yucatán contribute to and amplify the pervasive lack competitiveness of business and industry throughout the state, which, in turn, exacerbates social and economic marginality. This competitiveness gap is exemplified by generally low levels of productivity, even in Mérida, where value added per worker ($11 864 per worker) is less than two-thirds the national average (INEGI, 2004).[3]

Intra-state regional disparities

Yucatán must be regarded as a lagging region with respect to the rest of Mexico. For example, in terms of income the state ranks 18th nationally with per capita earnings of about $4700 (US), less than 80% of the national average (INEGI, 2007a). Furthermore, Yucatán is only one of 12 states with high or very high levels of marginality: in 2005, more than 60% of rural inhabitants, and 32% of the total population, lived in areas characterised by some combination of low incomes, poor levels of education, and inadequate housing (CONAPO, 2005). In 2005, 63% of the state's population lived with less than 2 minimum wages and almost half of it was living in overcrowding conditions (CONAPO, 2007).

Both the *Instituto Mexicano de Competitividad* (IMCO) and the *Centro de Investigación y Docencia Económicas* (CIDE) have confirmed Yucatán's relative lack of competitiveness. Although Yucatán ranks highly in some areas (rule of law and commitment to sustainable development), a recent IMCO (2006) report reveals that the state does not compare favourably in terms of inclusiveness, economic dynamism, stable and functional political system and international relationships.

However, a closer look at the data used to produce the rankings in the IMCO-EGAP (2006) Report allows pinpointing areas of opportunity to improve even those areas in which Yucatán has performed well. Although Yucatán's good position in the System and Rule of Law is based on a low incidence of delinquency acts, the quality of institutional justice and to a lesser extent expedited judicial processes; the state can improve its position by addressing corruption, the informal economy and IT piracy. Similarly, Yucatán's positive results on the sustainable development dimension of IMCO-EGAP's ranking was based on land and soil preservation, low CO_2 emissions and low annual generation of dangerous residuals. In contrast, Yucatán can further improve its position within the sustainable development component of the ranking by introducing reforestation, addressing soil's chemical degradation, protect natural areas, foster an efficient use of water in agricultural production, treating water, spurring firms to get green certifications, look for cleaner energy sources and protecting endangered species (Figure 1.5).

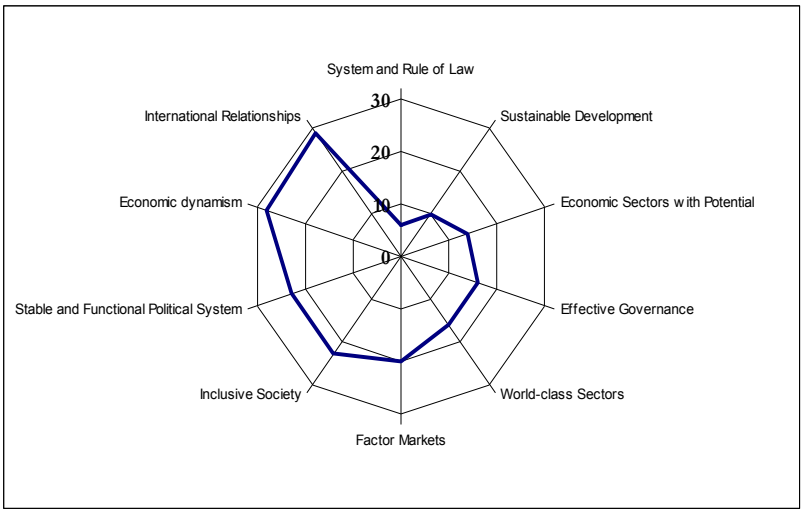
Milder results were obtained on economic sectors with potential, effective governance and world-class sectors' components in which Yucatán ranked 14th - 16th of the table. On the one hand, the data on the report reveals the there's a need to boost manufacturing's GDP, large manufacturing firms, the inventive coefficient (number of patents), the number of ISO 9000 certified companies, value-added in the maquiladora industry, as well as the training of workers on science and technology-related fields. On the other hand, world-class sectors can be supported by enhancing mobile telephony penetration, productivity of telecommunications, upgrading current infrastructure to 4-lane highways, increase port cargo and the number of paved airports as well as direct-flight destinations. In addition, there is a need to reduce the time spent on commuting, to extend railroad's network and to address a series of obstacles in the financial sector among which the low penetration, lack of competition, a weak presence of commercial banks and the low penetration of insurances in the economy. In contrast, government's relatively low efficiency can be improved by speedier administrative paperwork for firms and by promoting competences. In spite of high levels of income and asset revenues, the government must look for other sources of revenue that reduce its dependency on federal transfers and subsidies, improve transparency and introduce IT solutions for public management.

Factor markets are rather inefficient in Yucatán which ranks 20th in the IMCO-EGAP publication. Although wages and office costs are favourable, both labour and capital productivity are quite low. In addition, the cost of electricity and fuels are also seen as hampers for more efficient markets. Productivity in the agricultural sector is particularly low and is accompanied by low mechanisation of processes in the sector and high density of agricultural land which implies extreme division of land property and diseconomies of scale. Finally, all factor markets seem to have limited access to capital.

Further work needs to be done to promote a more inclusive society. The IMCO-EGAP ranking and particularly the data used to create it allows to identify health expenditure and life expectancy as major issues where the state should direct resources. In addition, Yucatán's weaker performance in the inclusiveness of society also stems from a low IT penetration, low average schooling years, the lack of gender equality in schools, as well as low numbers of master's and PhD graduates.

Figure 1.5 **Yucatán's Competitiveness in the Mexican States Ranking**

According to the Mexican Institute of Competitiveness



Source: Based on IMCO (2005)

In spite of a positive performance on citizen participation on elections and acceptable political functionality, the stable and functional political system displays a low ranking (23rd). The reasons for such poor performance lies in a low grading on the powers transfer index used in the report, as well as high concentration of political power in the state.

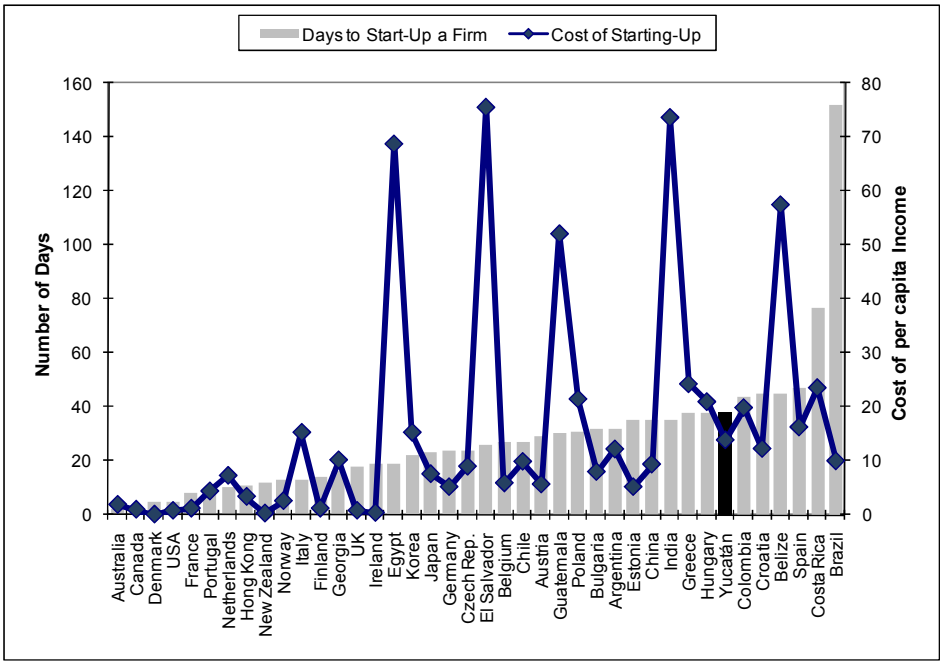
Although Yucatán has been growing fast, economic dynamism and international relationships components in the aforementioned ranking are the poorest performances of the state. According to the IMCO-EGAP report economic dynamism has been hampered by the public debt's level and the risk involved, as well as by the small size of the state economy. Although Mexico as a country is the top 3 reformer according to the World Bank's Doing Business 2007 Report, Yucatán also ranks in the middle of the table when Mexican States are considered. Recent reforms in Yucatán have allowed the state to ask for only 9 procedures, less than countries such as Spain or the Czech Republic (10); India or Costa Rica (11); China, Guatemala or Colombia (12); Greece or Brazil (17). Although the number of procedures in Yucatán is at the standard of more competitive countries than Mexico such as Chile, further reforms may allow Yucatán to cut the number

of procedures required to the levels of Hungary (6), Belgium (4) or Canada (2).

Reforms in Yucatán have allowed time to set-up a firm to fall albeit it needs to further reduce those times if it wants to compete globally. Currently, it takes 38 days to set-up a firm (Figure 1.6), exactly the same as in Greece and Hungary, but much less than Colombia (44), Belize (45), Spain (47), Costa Rica (77) or Brazil (152). However, frequent competitors for FDI make firm start-ups less time-consuming as in China or India where it takes 35 days, or as in Argentina (32), Guatemala (30), Chile (24) or the Czech Republic (24).

Figure 1.6 **Easiness to Start-up a Business**

Number of days and cost involved in starting-up as a proportion of per capita income in Yucatán and selected countries



Source: World Bank (2007) Doing Business 2006

Whatever Yucatán may still lack in speed and administrative easiness to set up a business, it is well compensated by the cost of start-up a firm. Although it is still cheaper to start a business in China or Eastern European countries such as Bulgaria and the Czech Republic, and Latin American countries among which Argentina, Brazil and Chile, Yucatán is still cheaper than often competitors such as Costa Rica, Belize, Colombia, Guatemala, Hungary, Greece, Spain and India (Figure 1.6).

Yucatán has made significant progress in the area of registering property. It takes 9 different procedures to finally register property in Yucatán in contrast to 1 procedure in Norway, 2 in the Netherlands, New Zealand or the United Kingdom, 3 in Austria, China or Finland. Indeed, Mexico as a country along with Australia, Argentina or Guatemala, asks for almost half of the procedures as in Yucatán. However, it is possible to register property in Yucatán in 29 days whereas in Mexico as a country it takes 74 days. It is faster to register property in Yucatán than it is in Chile, China, Brazil, Denmark, France, Germany or India. However, some progress is still necessary to reduce times to those experienced in countries such as Colombia or Greece (23 days), Costa Rica or the United Kingdom (21 days), Bulgaria (19 days) or Korea (11 days). Although it is not expensive to register property in Yucatán (3.18% of the value of property) as it is virtually the same cost as in China (3.1%) or the Czech Republic (3%) further reforms are needed to catch up with costs in countries such as Chile (1.3%), Guatemala (1.1%), Denmark (0.6%) or New Zealand (0.1%).

Running a business and finding difficulties to enforce a contract is a different story in Yucatán as it is time-consuming and expensive to do so. Enforcing a contract in Yucatán takes 495 days, which is just 3 days less than in Ecuador and 20 less than Spain, but several hundred more than in New Zealand, Australia or Denmark; twice as much as in Finland and China and even 80 days more than the average in Mexico. Moreover, enforcing contracts is expensive as it costs 23% of per capita GDP in Yucatán, 3% less than costs in China or Guatemala and 12% less than in India. Enforcing costs are three times those of Finland or Denmark, twice as much as in France, Greece, Canada or Australia and 5 to 8% more than in Brazil, Belize, Chile, Costa Rica, Spain or Ecuador. In fact, Yucatán is 3% more expensive than Colombia or Mexico as a country (World Bank, 2007).

Mérida's competitiveness position is lagging even compared with cities in southern Mexico. Researchers at Mexico's Centre for Economic Research and Teaching (CIDE) placed Mérida 33rd among 60 large metropolitan areas in Mexico in terms of competitiveness (Cabrero, Ziccardi and Orihuela, 2003). In general, the city ranked in the middle of the pack with respect to the economic, socio-demographic and institutional components of

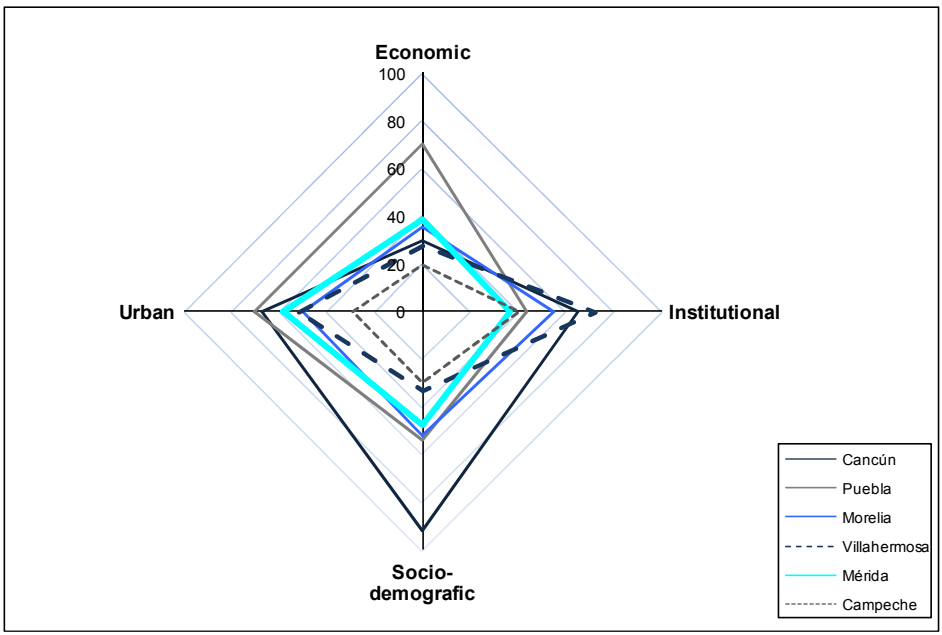
competitiveness (Figure 1.7). In terms of the quality of urban services (spatial-urban factors), however, Mérida figured among the 15 most competitive cities in Mexico. Overall, the CIDE study deemed several smaller (competing) metropolitan areas in the southern part of Mexico, including Cancún (10th) and Villahermosa (32nd), more competitive than Mérida.

Factors influencing and limiting growth

Regional differences among Mexican states are not only one of the highest in the OECD, but they have also been increasing. Indeed, the process of regional convergence that Mexico seemed to have been experienced before accessing the General Agreement on Tariffs and Trade (GATT) in 1986 and particularly after the entering into effect of the North American Free Trade Agreement (NAFTA) in 1994 has been replaced by a process of divergence (Esquivel and Messmacher, 2002; Sanchez-Reaza and Rodriguez-Pose, 2002; Chiquiar, 2005). Although divergence is not evident in the regressions for the period 1995-2001 (Table 1.3), the process is clearer for the extended period from 1995 to 2004 (Table 1.4). The reason behind unclear results for the former period may lie in the fact that by the end of 2000 and particularly in 2001 and 2002 demand for Mexican products particularly manufacturing exports fell as the US economy entered into a recession impinging on national and regional growth performance in Mexico. Mexican manufacturing production decreased and started to recover by the end of 2003 (Figure 1.8).

Figure 1.7 **Merida's Competitiveness among Urban Areas in Mexico**

According to CIDE's Ranking of Competitive Cities



Source: Based on Cabrero, Ziccardi and Orihuela (2003)

Table 1.3 **Growth Determinants in Mexican States (1995-2001)**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initial GDP	-.096 (-.526)	-.044 (-.250)	-.354 (-1.465)	-.428 (-1.868)	-.477 (-1.790)	-.451 (-1.617)	-.449 (-1.536)	-.604 (-1.541)	-.533 (-1.799)	-.687 (-1.676)	-.543 (-1.796)	-.453 (-1.335)	-.461 (-1.312)
Camtab	---	-.366 (-2.107)*	-.253 (-1.411)	-.046 (-.239)	-.023 (-.112)	.041 (.153)	.038 (.131)	.027 (.091)	-.119 (-.380)	.010 (.035)	-.099 (-.308)	-.112 (-.343)	-.115 (-.345)
FDI	---	---	.432 (1.787)	.567 (2.408)*	.570 (2.380)*	.461 (1.248)	.461 (1.222)	.439 (1.144)	.635 (1.597	.678 (1.473)	.626 (1.546)	.694 (1.633)	.718 (1.548)
Public inv.	---	---	---	-.394 (-2.181)*	-.427 (-2.096)*	-.526 (-1.605)	-.524 (-1.547)	-.461 (-1.284)	-.398 (-1.139)	-.411 (-1.119)	-.386 (-1.082)	-.361 (-.992)	-.373 (-.979)
Roads/Surface	---	---	---	---	-.082 (-.376)	-.074 (-.333)	.072 (.307)	-.089 (-.371)	.007 (.028)	-.060 (-.255)	.000 (002)	.003 (.010)	.003 (.014)
Bank Dep.	---	---	---	---	---	.163 (.389)	.165 (.380)	.102 (.226)	.020 (.045)	.071 (.158)	.026 (.057)	-.172 (-.308)	-.159 (-.274)
Exports	---	---	---	---	---	---	-.006 (-.027)	-.008 (-.035)	-.021 (-.101)	-.044 (-.201)	-036 (-.163)	-.040 (-.179)	-.034 (-.148)
Avg. School.	---	---	---	---	---	---	---	.213 (.604)	---	---	---	---	---
Tertiary Educ.	---	---	---	---	---	---	---	---	.254 (1.264)	---	.223 (1.029)	.297 (1.189)	.292 (1.128)
Popul. Trained	---	---	---	---	---	---	---	---	---	.225 (.834)	---	---	---
R&D/ GDP	---	---	---	---	---	---	---	---	---	---	.084 (.445)	.085 (.442)	.081 (.411)
Remitt.	---	---	---	---	---	---	---	---	---	---	---	.212 (.623)	.197 (.544)
MaquilaEmpl.	---	---	---	---	---	---	---	---	---	---	---	---	-.041 (-.151)
R^2	.009	.141	.229	.344	.348	.352	.352	.362	.394	.371	.399	.410	.411
Adj. R^2	-.024	.081	.146	.247	.222	.196	.163	.140	.183	.152	.154	.129	.087
F	.277	2.375	2.767*	3.543*	2.773*	2.260	1.860	1.630	1.868	1.694	1.625	1.460	1.268
N	32	32	32	32	32	32	32	32	32	32	32	32	32
df	30	29	28	27	26	25	24	23	23	23	22	21	20

*/ Significant at the 95% level **/ Significant at the 99% level

Source: Own Calculations

Table 1.4 **Growth Determinants in Mexican States (1995-2004)**
OLS Regressions Results

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initial GDP	.466 (2.882)**	.513 (3.323)**	.444 (1.972)	.367 (1.751)	.593 (2.618)*	.478 (2.198)*	.485 (2.124)*	.759 (2.567)*	.736 (3.724)**	.926 (3.125)**	.918 (3.032)**	.756 (3.768)**	.657 (3.084)**	.699 (3.503)**
Camtab	---	-.330 (-2.141)*	-.305 (-1.824)	-.092 (-.520)	-.199 (-1.137)	-.482 (-2.324)*	-.492 (-2.172)*	-.472 (-2.124)	-.307 (-1.610)	-.441 (-2.072)*	-.443 (-2.044)	-.310 (-1.614)	-.327 (-1.722)	-.294 (-1.650)
FDI	---	---	.096 (.043)	.234 (1.087)	.221 (1.084)	.701 (2.429)*	.701 (2.377)*	.739 (2.549)*	.568 (2.348)*	.298 (.897)	.309 (.907)	.556 (2.275)*	.518 (2.131)*	.317 (1.282)
Public inv.	---	---	---	-.406 (-2.455)*	-.251 (-1.446)	.187 (0.731)	.192 (.727)	.080 (.296)	-.024 (-.107)	-.018 (-.069)	-.025 (-.093)	-.052 (-.227)	-.069 (-.307)	.022 (.105)
Roads/Surface	---	---	---	---	.381 (2.057)*	.347 (1.999)	.353 (1.918)	.382 (2.109)*	.312 (2.086)*	.331 (1.924)	.330 (1.882)	.309 (2.049)	.328 (2.193)*	.313 (2.239)*
Bank Dep.	---	---	---	---	---	-.725 (-2.211)*	-.718 (-2.117)*	-.607 (-1.776)	-.622 (-2.245)*	-.544 (-1.663)	-.545 (-1.634)	-.610 (-2.183)*	-.417 (-1.323)	-.499 (-1.680)
Exports	---	---	---	---	---	---	-.020 (-.119)	-0.16 (-.101)	.029 (.210	.052 (.324)	.058 (.354)	.046 (.329)	.055 (.397)	.009 (.066)
Avg. School.	---	---	---	---	---	---	---	-.377 (-1.418)	---	---	---	---	---	---
Tertiary Educ.	---	---	---	---	---	---	---	---	.471 (3.659)**	---	---	.465 (3.579)**	-.518 (3.838)**	.473 (3.700)**
Popul. Trained	---	---	---	---	---	---	---	---	---	-.419 (-2.141)*	-.400 (-1.940)	---	---	---
R&D/ GDP	---	---	---	---	---	---	---	---	---	---	-.049 (-.362)	-.093 (-.817)	-.115 (-1.014)	-.080 (-.745)

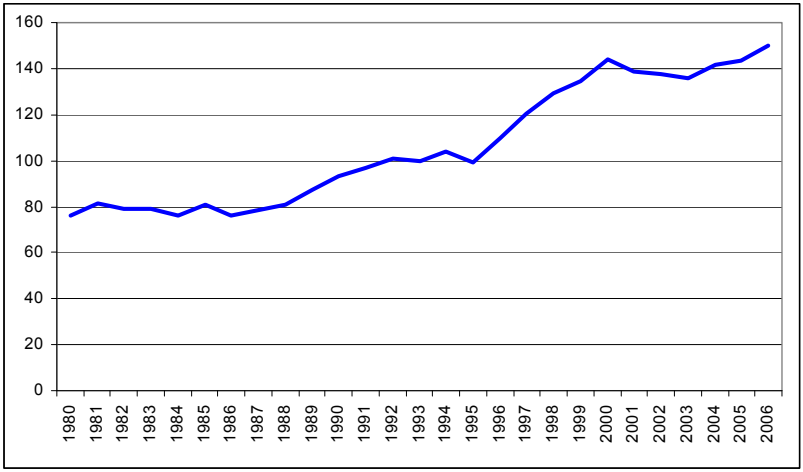
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Remitt.	---	---	---	---	---	---	---	---	---	---	---	---	-.245 (-1.259)	-.138 (-.729)
MaquilaEmpl.	---	---	---	---	---	---	---	---	---	---	---	---	---	.315 (2.036)
R^2	.217	.324	.328	.451	.528	.605	.605	.637	.750	.671	.673	.758	.775	.813
Adj. R^2	.191	.277	.256	.369	.437	.510	.490	.510	.664	.556	.539	.659	.667	.711
F	8.308**	6.942**	4.557**	5.538**	5.807**	6.377**	5.253**	5.041**	8.642**	5.856**	5.023**	7.644	7.222**	7.925**
N	32	32	32	32	32	32	32	32	32	32	32	32	32	32
df	30	29	28	27	26	25	24	23	23	23	22	22	21	20

Source: Own Calculations

*/ Significant at the 95% level **/ Significant at the 99% level

Figure 1.8 **Mexican Manufacturing Production Index**

Annual Average Index Values (1993=100)

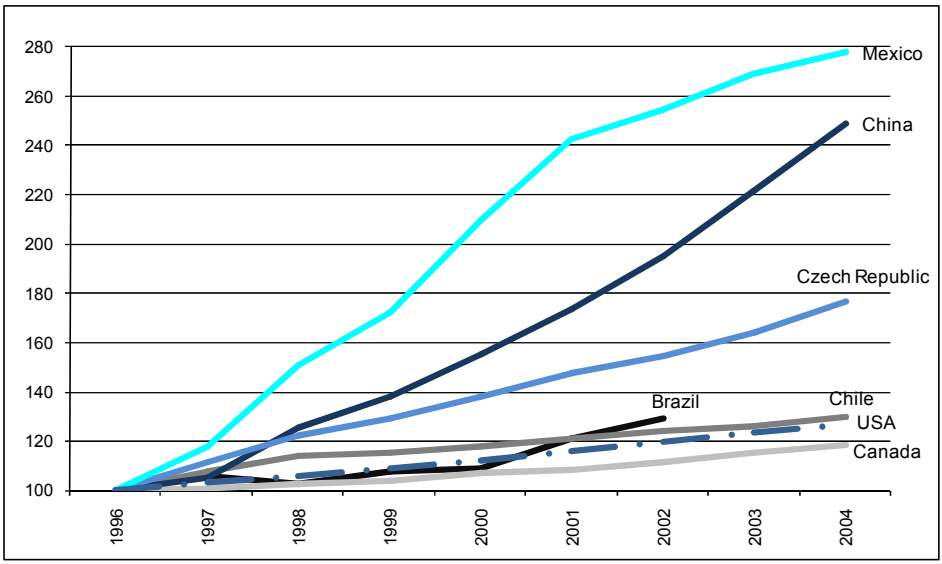


Source: INEGI (2007a)

Growth performance in Mexican regions is also influenced by changes at the international level among which changes in relative wages – particularly with the emergence of China – mergers and acquisitions in the automobile industry, as well as technological change in electronics. Although Mexico has competed for FDI attraction on the basis of lower total manufacturing costs (including not only input costs, but also trade costs such as transport, distance and time-related), labour costs have played an important part in Mexico's attractiveness. Over the years, local labour markets where manufacturing companies – many of them foreign- started to compete for available workers, saw their costs dramatically rise compared to competing countries such as Brazil, China or the Czech Republic (Figure 1.9).

Figure 1.9 **Increases in Manufacturing Wages**

Manufacturing Wage Index (1996=100)



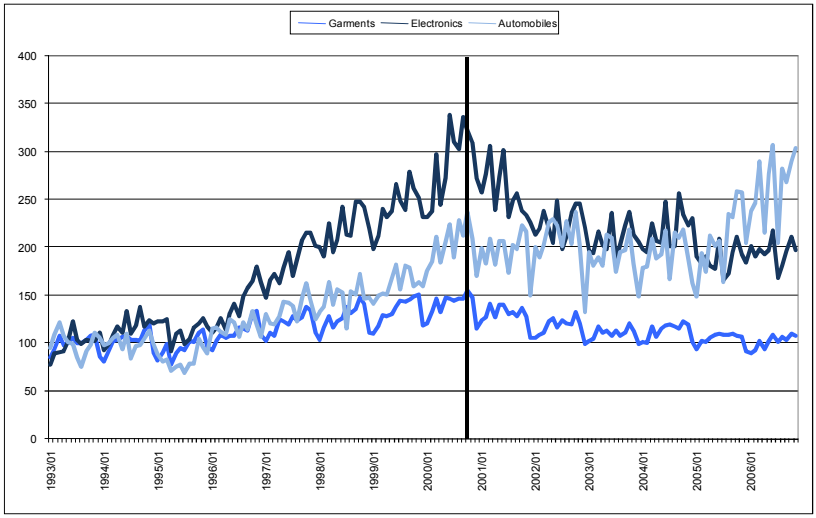
Source: Own calculations based on data on ILO (2007)

Increased competition has implied that automakers have redefined their relationship with component suppliers in a myriad of organisational forms that allow the former to avoid riskier market-vulnerable activities in production and concentrate on innovation (Lung and Volpato, 2002). At the same time, at the Original Equipment Manufacturers (OEM) level – and even among the First-Tier Suppliers (FTS) – the industry has managed to consolidate through a series of mergers and acquisitions such as Daimler-Chrysler or Renault-Nissan among others. Hence, changes at the OEM or FTS levels have changed also the role and activity of many plants across the world and Mexico is no exception; in many cases, these changes have brought about a reduction or reorientation of the plant size or scope in Mexico and in consequence an impact on regional performance. By the same token, changes in electronic products for instance, those brought about by LCD or plasma technologies replacing traditional TV sets have also resulted in plant closures and consolidation of activities, thereby leading to changes in regional growth performance. In Mexico, these events along with increasing wages and the US recession led to a decline mainly in textiles,

electronics and automotive. Whereas the former has continued declining, electronics have stagnated and automotive has taken off again (Figure 1.10).

Figure 1.10 **Mexican Manufacturing Index in Main Manufacturing Branches**

Monthly Index Values (1993=100)



Source: INEGI (2007a)

Regional economies in Mexico are relying more on FDI and on a knowledge-based industry than on traditional public-investment driven growth. Despite the economic, labour and industrial changes discussed above imply that regressions for 1995-2001 period do not yield significant results, the regressions using the 1995-2004 span shed some light over the dynamics of regional growth in Mexico. The period researched is one where NAFTA rules are set in motion and therefore FDI – and even maquiladora employment is almost statistically significant- is one of the variables driving economic growth among Mexican states. However, trade does not seem to be supporting the trend. Although divergence is clear in the model and economic polarisation in the country seems to be increasing, richer states are not profiting from R&D, banking activities or public investment, instead the main driver of the process is tertiary education. Indeed, Mexican states' economies could be becoming increasingly based on knowledge and thus it is more important for a state to have high-school graduates (baccalaureate

degree) than the average schooling of the entire population. Finally, public investment was not associated to growth; however, the extension of the road network (motorway network as a proportion of the state's surface) is in direct relationship with regional growth performance, perhaps as it also determines physical, as well as time distance from international markets.

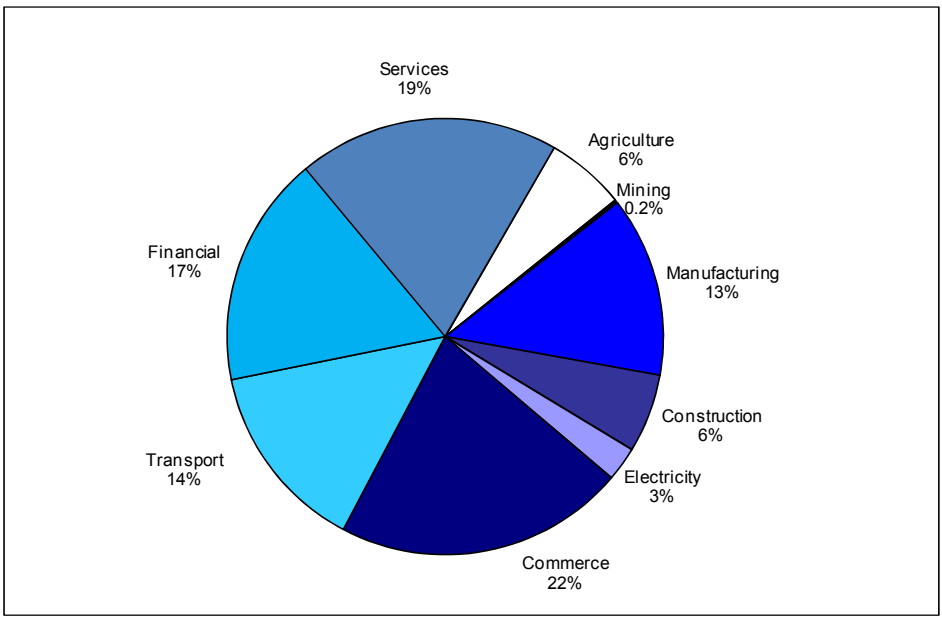
There are a number of issues that should also be taken into account in a more detailed analysis. Poor performance in many lagging states in Mexico might be driven by limitations on local investment such as entrepreneurship formation, incentives to join the informal economy, lack of credit. By the same token public investment may not be enhancing private investment. Labour productivity may also be hindered by the coverage of the health system or the process of human capital formation. Finally, despite the model does not find trade to be related to growth, the analysis should also consider that trade opportunities and markets are also a source of further investment and employment that should not be underestimated.

Fostering local investment

Yucatán's economy is based on tertiary activities, but manufacturing now constitutes an important and growing share of the local economy. Although services and financial services account for almost half of the Yucatecan economy, manufacturing now accounts for 13% of the state's GDP (Figure 1.11). Moreover, manufacturing is not only the second economic sector in terms of employment and the third in GDP size, but also one of the fastest growing sectors (Figure 1.12). It is important to note that primary activities are declining; whereas growth rates in agriculture are meagre, those of mining are negative. In contrast, transport and communication activities probably fuelled by the dynamism in the manufacturing sector are also growing fast albeit it is still a small sector by both accounts (employment and GDP).

Figure 1.11 **GDP by Sector in Yucatán**

Constant Prices (1993=100) in 2004

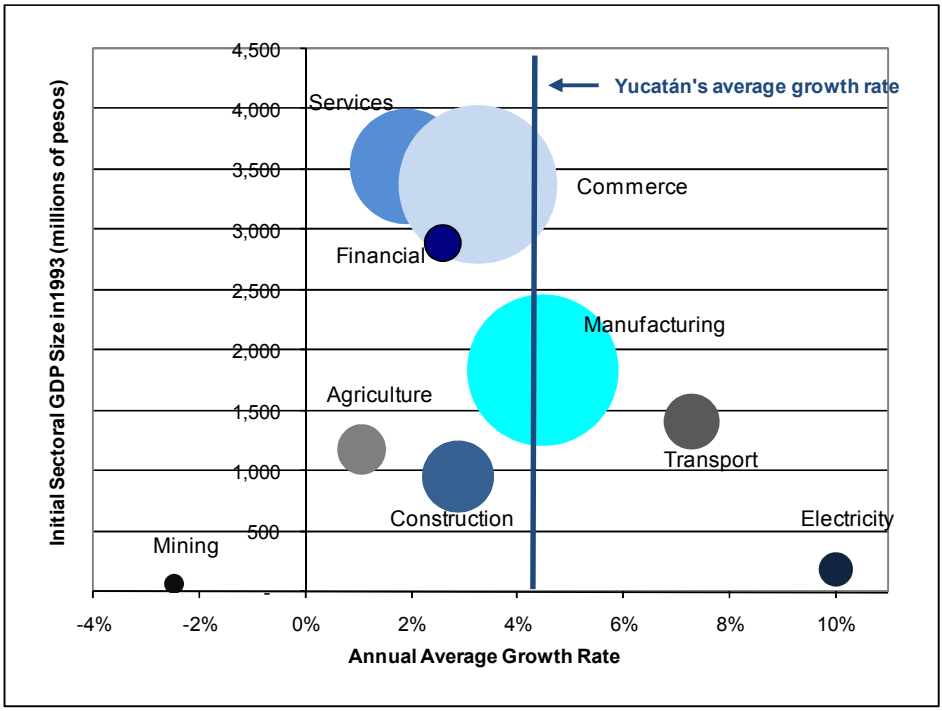


Source: INEGI (2004)

Investment is meagre in almost all economic sectors in Yucatán. Despite the fact that manufacturing is still a smaller sector than services, the bulk of investment in Yucatán is dedicated to manufacturing activities. Manufacturing account for as much investment as the rest of the economic sectors together (Figure 1.13). However, the labour-intensive nature of all sectors in Yucatán is reflected in a low investment ratio to GDP. Only primary activities display a higher ratio of investment to GDP than the national level (Figure 1.14), which suggests significant levels of underinvestment by both local and foreign companies in Yucatán.

Figure 1.12 **Sectoral Growth Trends in Yucatan**

Employment, GDP and Economic Growth by Sector of Economic Activity in 2003

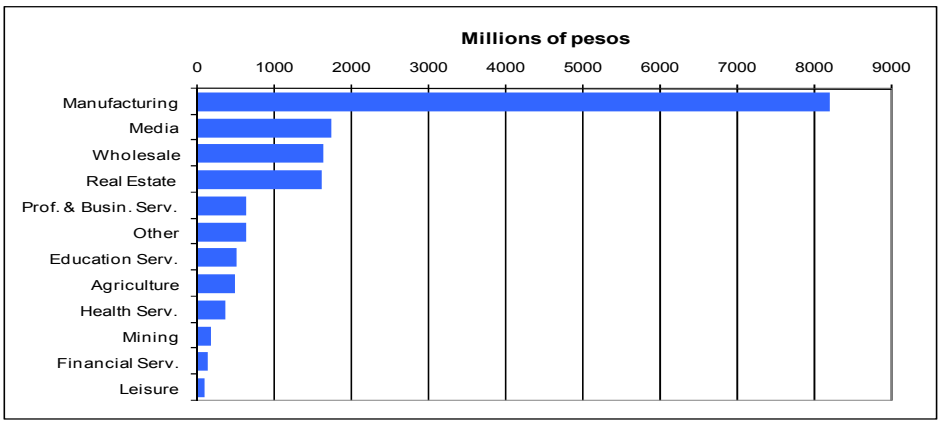


Source: INEGI (2004)

Note: Figure 1.12 shows GDP (initial values of the period) in 1993 (y axis) and average annual growth rates for the 1993-2004 period (x axis) for each economic sector and the bubble size show sectoral employment in 2004 for Yucatán. The line crosses at 3.4%, which is the state's annual average growth rate.

Figure 1.13 **Investment by Activity in Yucatán**

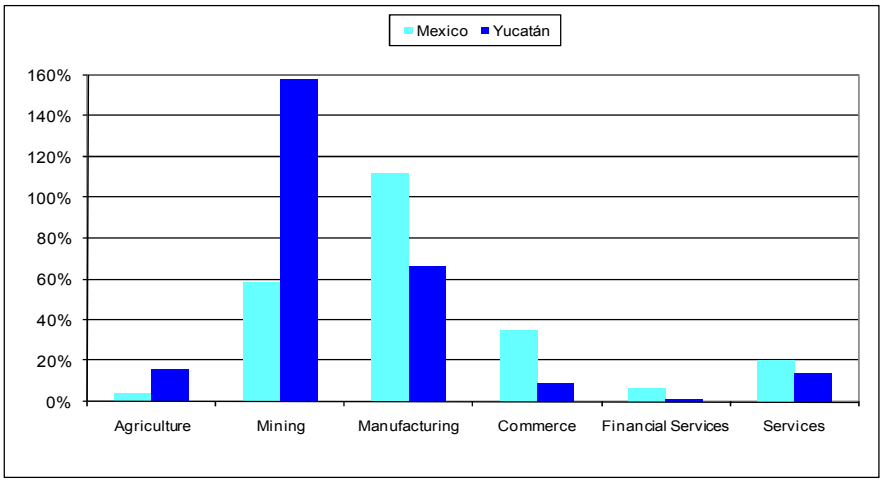
Total assets in 2003 in current prices



Source: INEGI (2004) Economic Census 2004

Figure 1.14 **Investment Shares by Sector in Yucatán and Mexico**

Investment Ratios to GDP in 2003



Source: Own calculations based on INEGI (2004) Economic Census

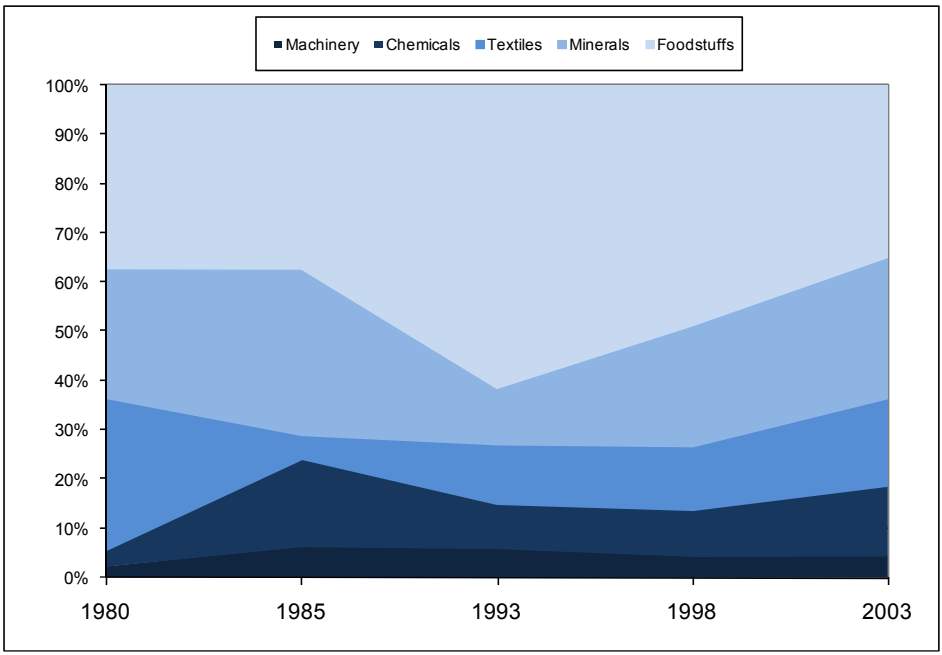
In manufacturing, Yucatán has invested more than in any other sector particularly in foodstuffs and textiles. After a peak in 1993, foodstuffs' share of manufacturing investment in the state has declined to levels similar to those of the 1980s (Figure 1.15). The dominant size of foodstuffs is likely to be related to growing markets in tourist areas such as Cancún and the rest of the Quintana Roo's coast. At the same time, migration from rural to urban areas may be entailing greater consumption of foodstuffs. The second largest share of total assets in the state has been channelled to minerals particularly for non-metallic. In contrast, an opposite trend can be found in textiles that have been recovering its share level since 1993. In chemicals, there is s slight positive trend towards increasing its share of total assets fuelled perhaps by a boom in plastics and packages for foodstuffs going to Cancún and the *Riviera Maya*. Smoother and less significant trends can be found in machinery. In terms of employment these movements are less dramatic (Figure 1.16). However, it is important to note an important growth of employment in textiles since 1985 even in periods of dwindling investment shares in the sector. As a result, Yucatán displays high levels of specialisation in textiles in municipalities such as Mérida, Motul, Tecax, Tizimín, Umán and Valladolid (Figure 1.17). It is possible that this trend in textiles maybe related to FDI.

The transformation in textiles has implications for endogenous growth potential in the state and for indigenous firm development. In 1980, more than one-third of manufacturing investment in Yucatán was dedicated to hard-fibre textiles and made the state the largest producer of such type of fibres in the country. Although by 1985, Yucatán remained an important producer of hard-fibres –mainly due to sisal- the industry only represented 4% of manufacturing's investment. Nowadays, garments alone account for more than 10% of manufacturing's employment; that is, over the past 20 years, Yucatán went from traditional manufacturing based on sisal and foodstuffs to garment production based on FDI.

Foodstuffs still have the largest investment shares in manufacturing but depict the inward-looking nature of most manufacturing activities of Yucatán. Although foodstuffs account for one-quarter of manufacturing's investment, they have focused in providing products for state –or even Peninsula level- consumption. While foodstuffs concentrated investment in oils and animal foods in 1980, they also included chocolate and dairy production. Nowadays, the bulk of investment in foodstuffs is in bread and cookies production, beverages, grain milling and animal foods.

Figure 1.15 **Changes in Investment Shares in Manufacturing in Yucatan**

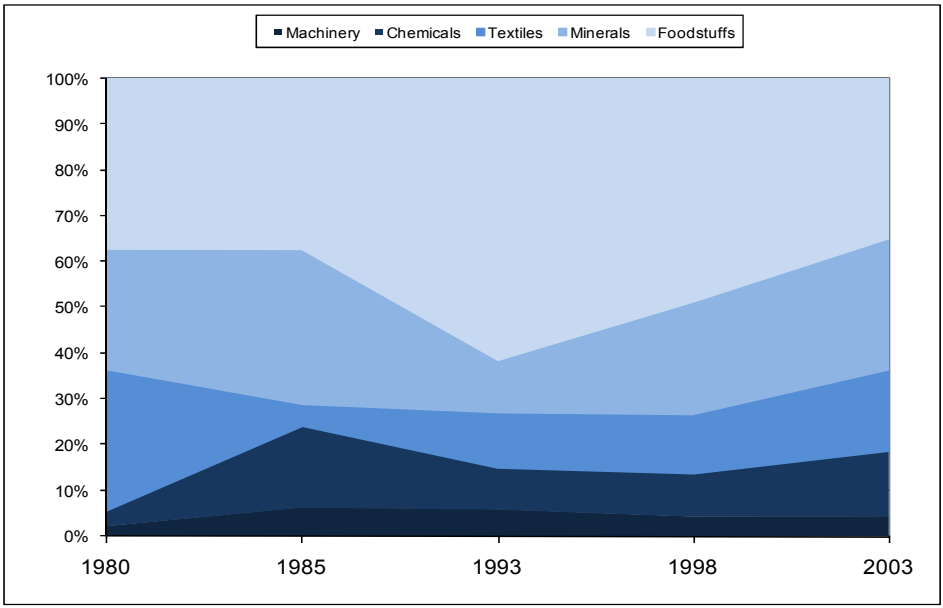
Share of Total Assets by Manufacturing Subsector in 2003



Source: Own calculations based on INEGI (2004) Economic Census 2004

Figure 1.16 **Changes in Manufacturing's Employment Shares in Yucatán**

Share of Total Employment in Main Manufacturing Subsectors in 2003



Source: Own calculations based on INEGI (2004) Economic Census 2004

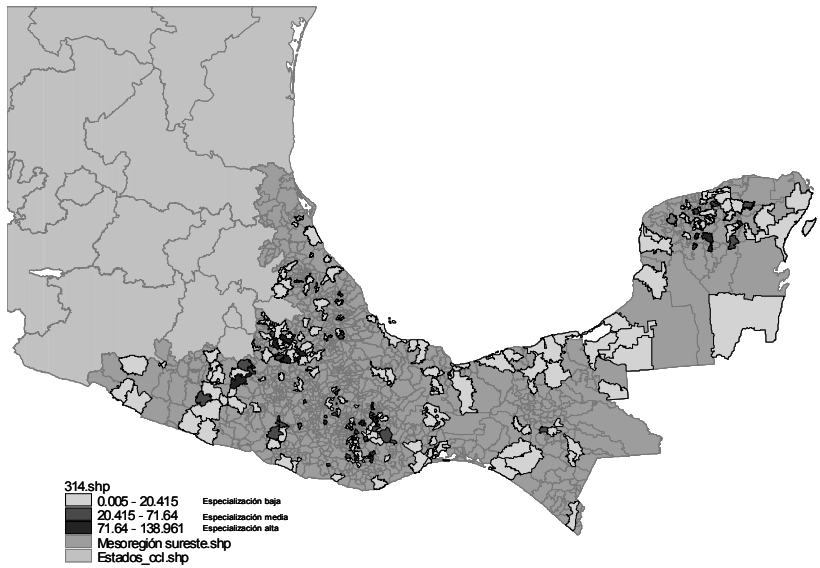
SMEs and Entrepreneurship formation

While there are key benefits of inward investment attraction, it is also important to foster other endogenous sources of growth and employment. FDI has been a source of growth and employment creation not only in Mérida, but also in smaller communities such as Valladolid. However, relying on inward flows of investment both from domestic – but not local- or foreign origin implies that from the perspective of the country it is only a question of competition for FDI among regions, and domestic relocation of firms. Moreover, backward and forward linkages in the production chain are sometimes less exploited in regions heavily relying on FDI, particularly so, in the case of Mexico. In addition, local revenues are also lower in often tax-exempted schemes for FDI attraction. In contrast, FDI can also generate jobs and boost growth as well as expose local firms to new technologies.

At the core of endogenous growth are domestic and in particular small and medium enterprises (SMEs). In many countries SMEs not only create a large proportion of new jobs, but also generate a pool of entrepreneurs who can take risks and invest. In addition, SMEs also stimulate competition and foster a dynamic entrepreneurial culture. In the European Union, SMEs account for two-thirds of all employment and they represent around 80% in some countries such as Sweden, Switzerland, Italy, Mexico and Spain (Figure 1.18). Yucatán's firm demographics show also a high proportion of SMEs, comparable to those in Spain and slightly below the national average. If the number of firms is considered the share of SMEs of total firms in the EU goes to over 99% (Observatory of European SMEs-European Union, 2007).

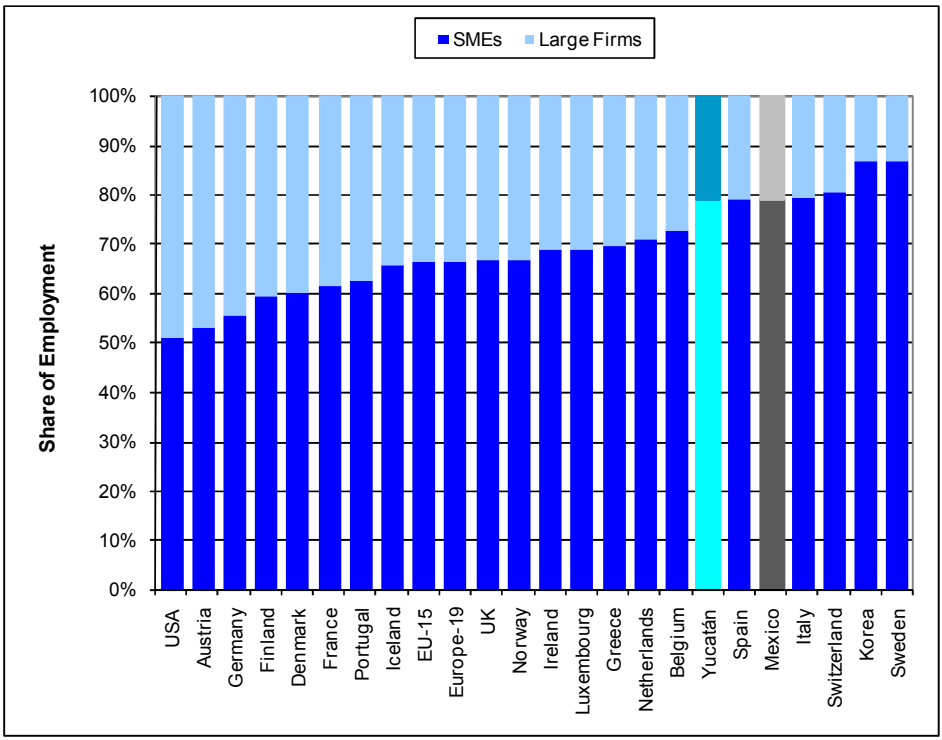
Figure 1.17 **Specialisation in Textiles in Southern Mexico**

Municipalities in the South-Southeast Meso-region according to employment location quotients



Source: SEDESOL (2006)

Figure 1.18 **SMEs in the OECD and Yucatán**



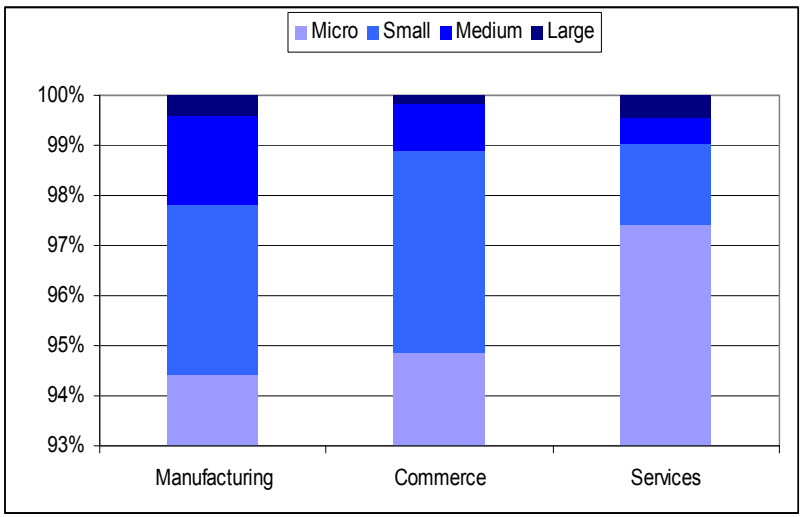
Source: EU (2007) Observatory of European SMEs; US Census Bureau (2004) 2002 US Economic Census; Korea Federation of Small Businesses (2007); INEGI (2004) Censos Económicos 2004.

Note: Each country's definition of SMEs was used. In the case of the EU those are firms with less than 250 employees; in the USA firms with less than 500 employees; Korea less than 300 workers. In the case of Mexico, less than 500 in manufacturing and less than 100 in commerce and services.

Yucatán's firm and employment structure is less similar to Mexico than to other European countries. Mexican firm are almost entirely SMEs, regardless of the sector (Figure 1.19). It is particularly important underlying the fact that the vast majority (close to 95% in manufacturing and commerce and over 97% in services) are extremely small (micro firms with less than 10 workers). In fact, Mexico is the country with the largest proportion of

employment in micro firms among OECD countries accounting for over 95% of total employment (Figure 1.20). In contrast, Yucatán's firm demographics show that half of the state's jobs are accounted for micro firms, a structure that is even more –albeit slightly- similar to Italy or Spain than Mexico.

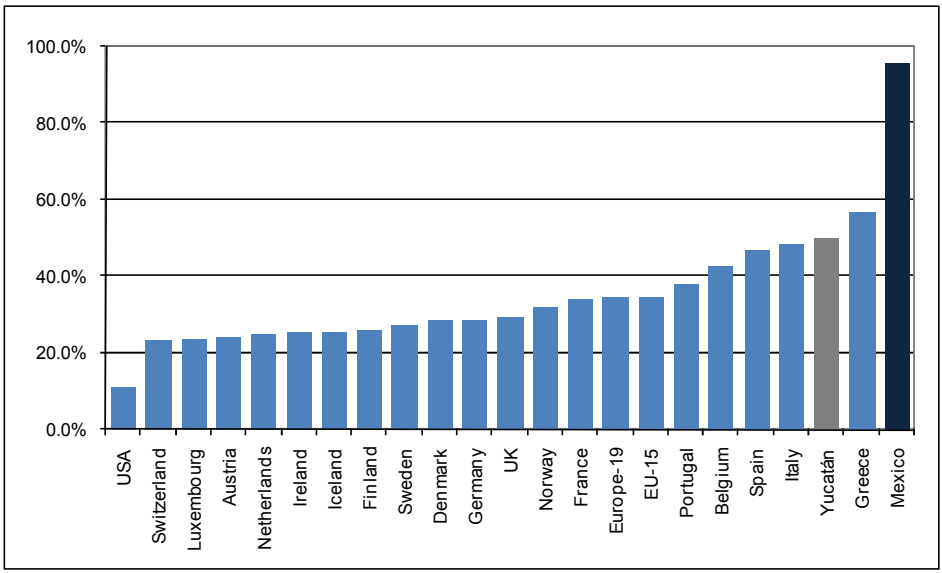
Figure 1.19 **SMEs in Mexico by Sector, 2002**



Source: Secretaría de Economía (2003) Observatorio PyME de México 2002

Figure 1.20 **Micro Firms in OECD Countries and Yucatán**

Employment in micro firms as a proportion of total



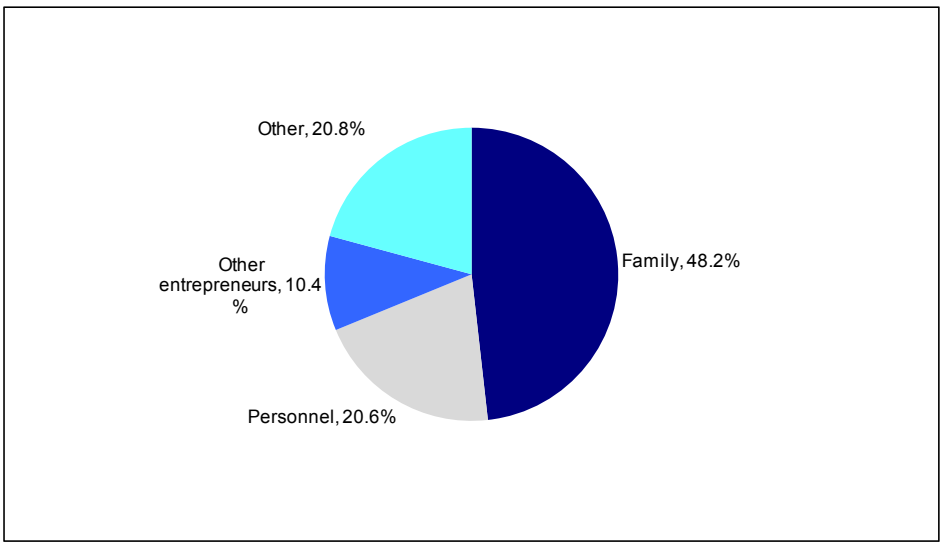
Source: EU (2007) Observatory of European SMEs; US Census Bureau (2004) 2002 US Economic Census; INEGI (2004) Censos Económicos 2004.

Note: Micro firms employ less than 10 workers in all countries. Mexico and Yucatán values were taken using sectoral definitions of micro firms (less than 30 in manufacturing, less than 5 in commerce and less than 20 in services).

Entrepreneurship in Mexico is mostly a family activity that passes on through generations and limited amount of spin-offs and start-offs take place. Almost half of entrepreneurs in Mexico have become so through one member of the family passing on business responsibility at some point in time, whereas personnel in the company and other entrepreneurs playing a minor role in intergenerational transfer of ownership within Mexican firms (Figure 1.21). In addition, nearly two-thirds of entrepreneurs have been previously involved in business, whereas there is a limited amount of workers that spin-off their companies or independent professionals becoming entrepreneurs (Figure 1.22).

Figure 1.21 **Generational Change in SMEs in Mexico**

Owner's successors upon retirement



Source: Secretaría de Economía (2003) Observatorio PyME de México 2002

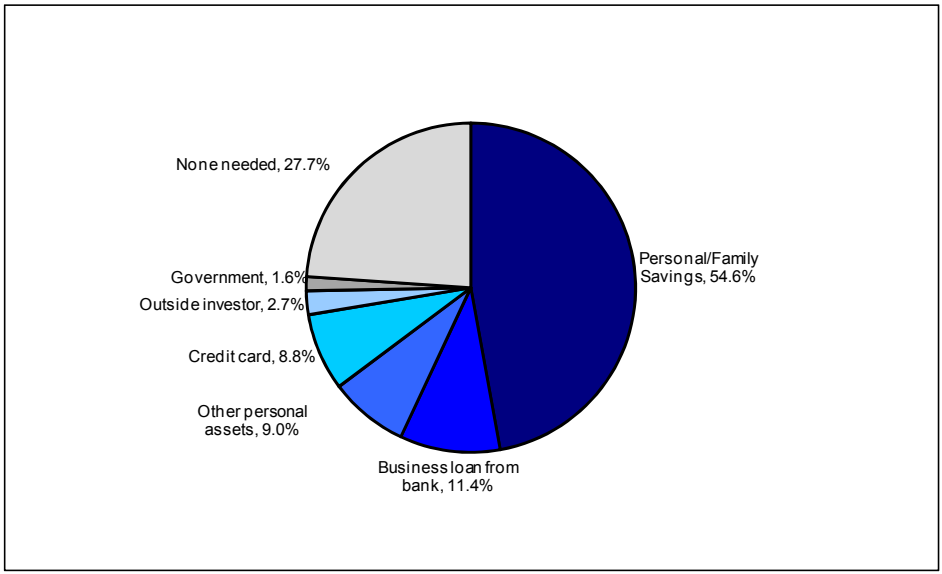
Informality

Informal businesses account for a sizable part of the Mexican economy. Around 15% of the country's GDP is generated through the informal economy (Rodarte, 2003). It represents four times the size of the agricultural sector or as large as manufacturing activities in the country (INEGI, 2007a). Around 27% of all employment in Mexico is involved in informal activities.

Although employment opportunities have been growing over the past 6 years they have been insufficient to keep pace with population growth. The formal employment that has been created is generally of poor quality; more than two-thirds of all jobs in the formal economy pay less than three times the minimum wage currently representing daily incomes of around $8 USD (Figure 1.23). In contrast, medium to higher pay jobs only represent 12 and 10% of formal employment. To add to the paying level, a large segment of the working population is underemployed, almost 60% of workers lack employment benefits such as social security and more than one-third works less than a full-time working week (less than 35 hours per week).

Figure 1.22 Mexican Entrepreneur's Previous Activity

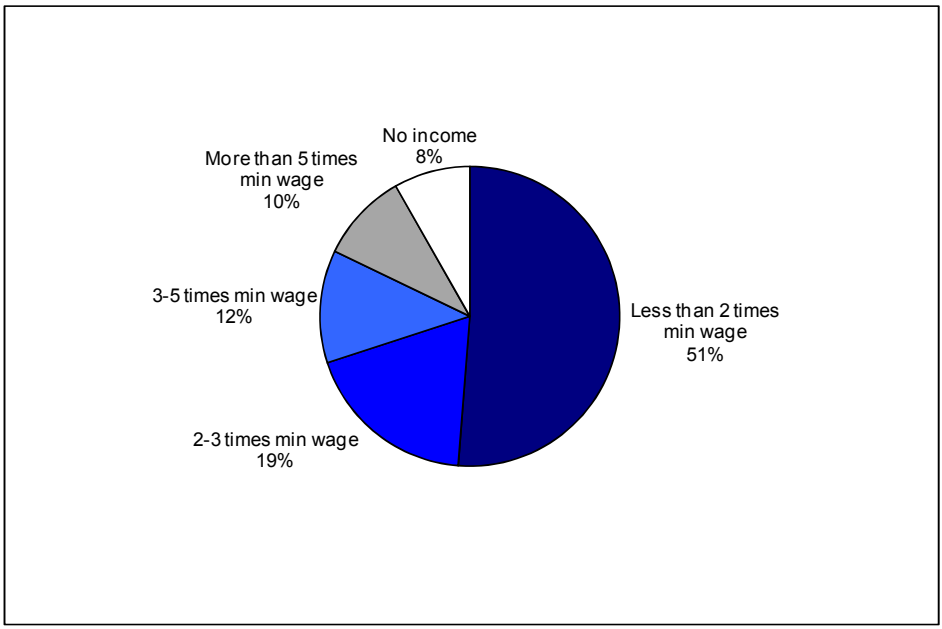
Average values for manufacturing and commerce



Source: Secretaría de Economía (2003) Observatorio PyME de México 2002

Figure 1.23 **Wages in the Formal Economy**

by level of workers' income

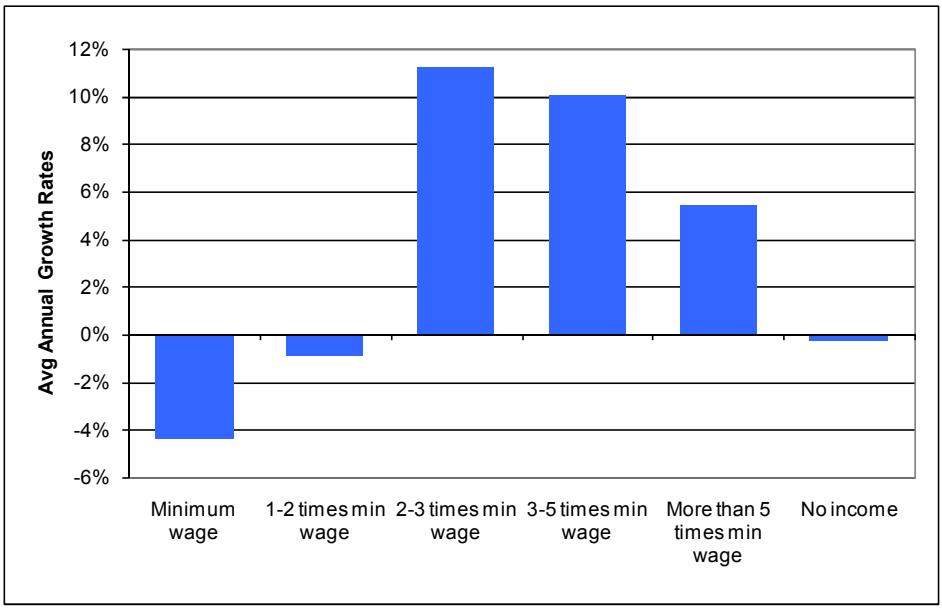


Source: INEGI (2007b) Encuesta Nacional de Ocupación y Empleo

Nevertheless, at least the middle segment of jobs has been growing strongly. Since 2001 there has been a trend towards employment growth in the medium income range, from 2 to 5 times minimum wage. These brackets have been growing at an annual average growth rate of over 10% (Figure 1.24). In contrast, lower income jobs have actually decreased. Although, higher paid jobs have been growing at rates of over 4% annually, these high-quality jobs are lagging behind middle-income ones.

Figure 1.24 **Growth of Formal Employment in Yucatan**

by average annual growth rates in employment (2001-2006)



Source: INEGI (2007b) Encuesta Nacional de Empleo y Encuesta Nacional de Ocupación y Empleo

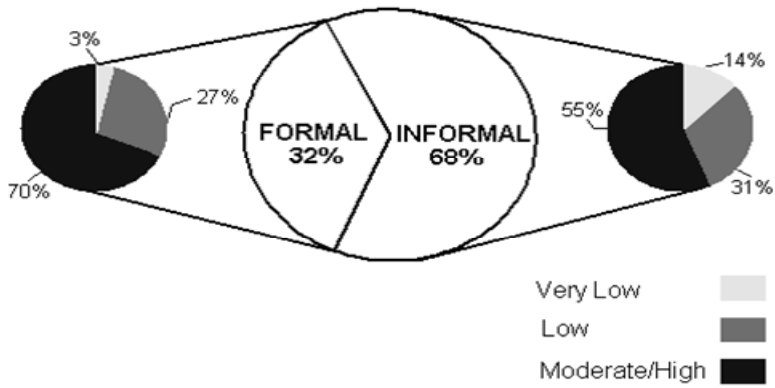
Financial Support

The majority of firms have access to credit via the informal economy. A recent study highlights the role of the informal financial sector in the case of Valladolid, a relatively large municipality for Yucatán (69 000 inhabitants) halfway between Mérida and Cancún. Access to the formal financial system is extremely limited. Only 38% of households in Valladolid have bank accounts, 21% had obtained a bank loan in the past, and about 10% of respondents have access to a credit card (Biles, 2005). Due to the difficulty in penetrating the formal financial system, informal credit comprised more than two-thirds of the total financial resources (Figure 1.25) and the vast majority of households (82%) had made use of informal credit during the previous year.

Regardless of the income level, Yucatecan households rely on the informal economy to finance their projects. Among the poorest households, the informal sector comprises virtually the only source of credit (89%). Low-income households also acquire the vast majority (71%) of their financial resources informally (Figure 1.25). Surprisingly, moderate to high-income respondents rely on the informal sector for more than half of their credit needs.

Figure 1.25 **Distribution of Formal and Informal Credit in Valladolid, Yucatan**

by level of income



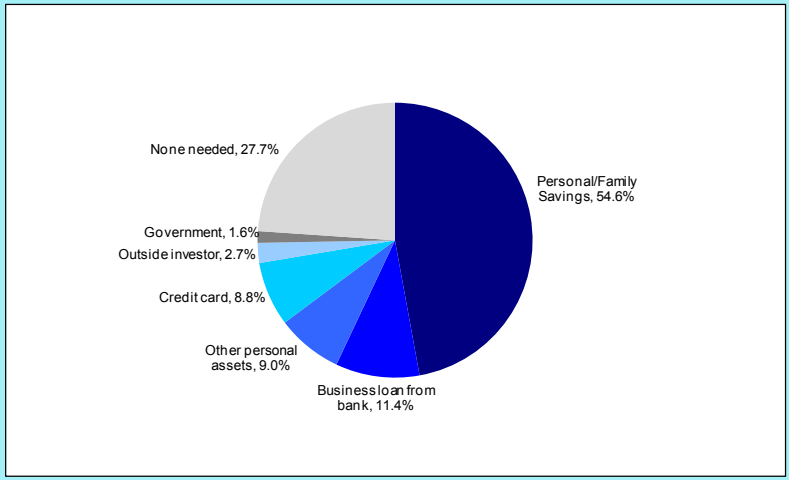
Source: Biles (2005)

However access to credit, even taking into account informal sources, is highly uneven. Very low and low-income households comprise about 70% of the population. However, the moderate to high-income group received 70% of all formal credit. Surprisingly, wealthier households also accounted for more than half of total informal credit obtained by all households. Overall, more than 60% of all financial resources were concentrated among the wealthiest households in Valladolid. Between the formal and informal sectors, 95% of the population in Valladolid has access to some form of credit. At the time of the study, 51% of all households were carrying an average debt of about $1 250 USD.

Box 1.1 The Role of Personal Savings in Business Expansion and Investment in the USA

It is important to also recognise the important role played by savings as a form of future investments. In the US case, more than half of business owners recurred to personal or family savings for future investments or expansions and the proportion rises to nearly two-thirds if other personal assets are included (Figure 1.26). In contrast, only just over one in ten businesses used a bank loan and almost a similar proportion used credit cards. Similarly, the US government plays only a marginal role in financing businesses expansion either through credit or guarantees. Therefore, financial-support policies may be important, but there is no substitute to savings' capacity.

Figure 1.26 **Sources of Financing in the USA**



Source : US Census Bureau (2006) 2002 Surveys of Business Owners

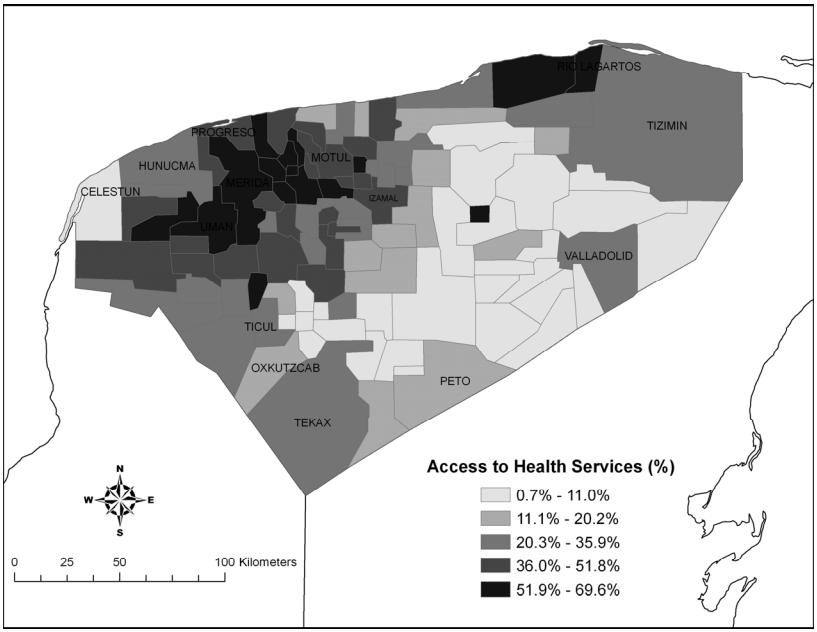
Coverage of the health system

Yucatán has become a medical hub for the whole Peninsula, but access to health services is concentrated in a handful of municipalities. The health system coverage is still limited in the state. Roughly 30% of the population are insured by the national security system (IMSS) and another 30% rely on more basic coverage by the recently created Seguro Popular (Popular Security). The municipality of Mérida concentrates 40% of the population of the state, but over 60% of insured population by IMSS. If the functional area of Mérida comprising the municipalities of Conkal, Kanasín, Mérida, Ukú and Umán is taken into account, the share of insured population increases to 68%.[4] Moreover, only 10% of Yucatán's municipalities concentrate two-thirds of the state's population but over 80% of the insured population (insured by IMSS). Outside Merida's functional area, only 5 municipalities (Samahil close to Mérida, Sacalum just South of Mérida, Quintana Roo municipality, as well as Río Lagartos and San Felipe in the Northern coast) appear with considerable shares of insured people compared to their total population (Figure 1.27).[5]

Yucatán health services are not only concentrated but they are also insufficient. Remoteness in many rural communities hampers medical-service delivery, not to mention their small size and that an important share of the population is uninsured. Yet, few state resources are channelled towards health. Despite Yucatán is one of the states in Mexico where public (federal) spending on health as a proportion of GDP is higher, the state of Yucatán spends only a marginal share of total spending (Figure 1.28). Whereas Mexican federal resources in health have been geared towards poorer states such as Chiapas, Oaxaca or Zacatecas, it is richer states –with the exception of Tabasco that by both accounts excels the rest of the pack- such as DF, Jalisco or Chihuahua that are spending most state resources on health. This trend however, is driven by the fact that the share of uninsured workers is larger in poorer than in richer states (World Bank, 2006); that is, the amount of uninsured people in poorer states is usually larger than in rich ones, which implies that public spending at the state level on health will represent a smaller proportion even if in some cases greater resources are allocated to it.

Figure 1.27 **Concentration of Health Care in Yucatán**

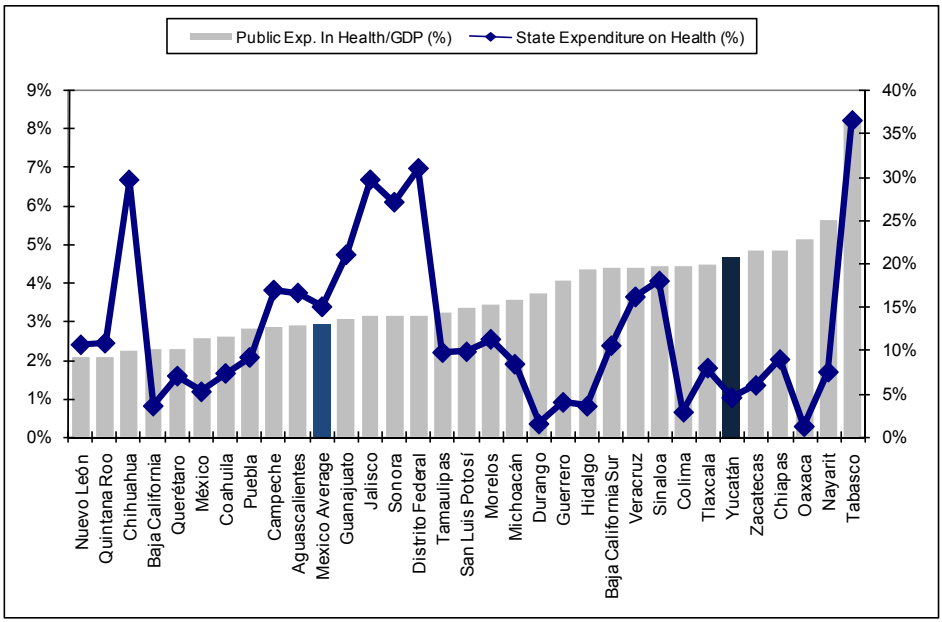
Shares of insured to total population by municipality in 2005



Source: SSA (2006)

Figure 1.28 **Public Spending on Health in Mexico**

Federal and State Spending on Health



Source: SSA (2006)

Human capital formation

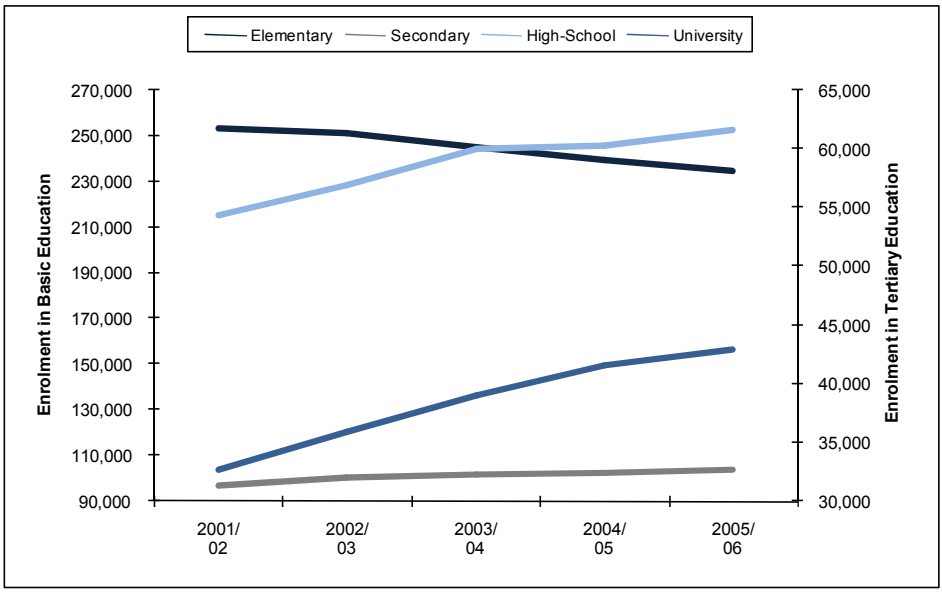
Despite Mérida has become the Peninsula centre for higher education, there are clear mismatches between qualifications acquired in school and those demanded in the labour market. More than a dozen major public and private institutions of higher education and research are located in Mérida. Consequently, the state capital boasts a relatively well-educated work force, in which 11% of the population has a university education. Enrolment in high school, particularly in rural areas, has also increased dramatically in recent years. Yet, the state's labour force has less than 1 in 5 workers with either high-school or university degree, whereas the majority has either complete or incomplete primary education (INEGI, 2007b).

Unemployment is precisely more acute among the yound and educated. The concerns of government officials and the private sector are reinforced by high rates of unemployment among young people and university graduates. Although official unemployment rates among the economically active population in Mérida are generally low (averaging 1.6% since 2002), the highest rates are found among men and women between 20 and 24 years of age, averaging almost 3.7% over the past five years. The situation is further complicated by the fact that workers with greater than high school education comprise nearly 50% of the unemployed. While this statistic likely indicates greater levels of participation in the formal economy among the better educated, it also represents an important social issue in a region in which 30% of the population is less than 25 years of age. Although business representatives and local entrepreneurs claim that high levels of unemployment are due to lack of preparation at the university level, lack of sufficient economic opportunities for college graduates is also likely a contributing factor.

Schooling accessibility and quality

There is a possible risk of further polarising society through access and quality of education. While there are an increasing number of students entering to high-schools and universities, elementary schools' enrolment has been consistently declining since 2001 (Figure 1.29). Since 1990, Yucatán has experienced a demographic change resulting in less children (share of population of 9 years and younger) leading to a reduced number of students in basic schooling. In addition, people not enrolling in primary schools or leaving it early are usually also facing economic difficulties whereas middle and upper classes are benefiting from numerous universities and high-schools. Although Yucatán's advanced-education degrees may enjoy national recognition, quality of education at the basic level is one of the lowest in Mexico. Yucatán is fourth place in failed students in primary school only after the three poorest states in the country (Figure 1.30).

Figure 1.29 **School Enrolment in Yucatán**

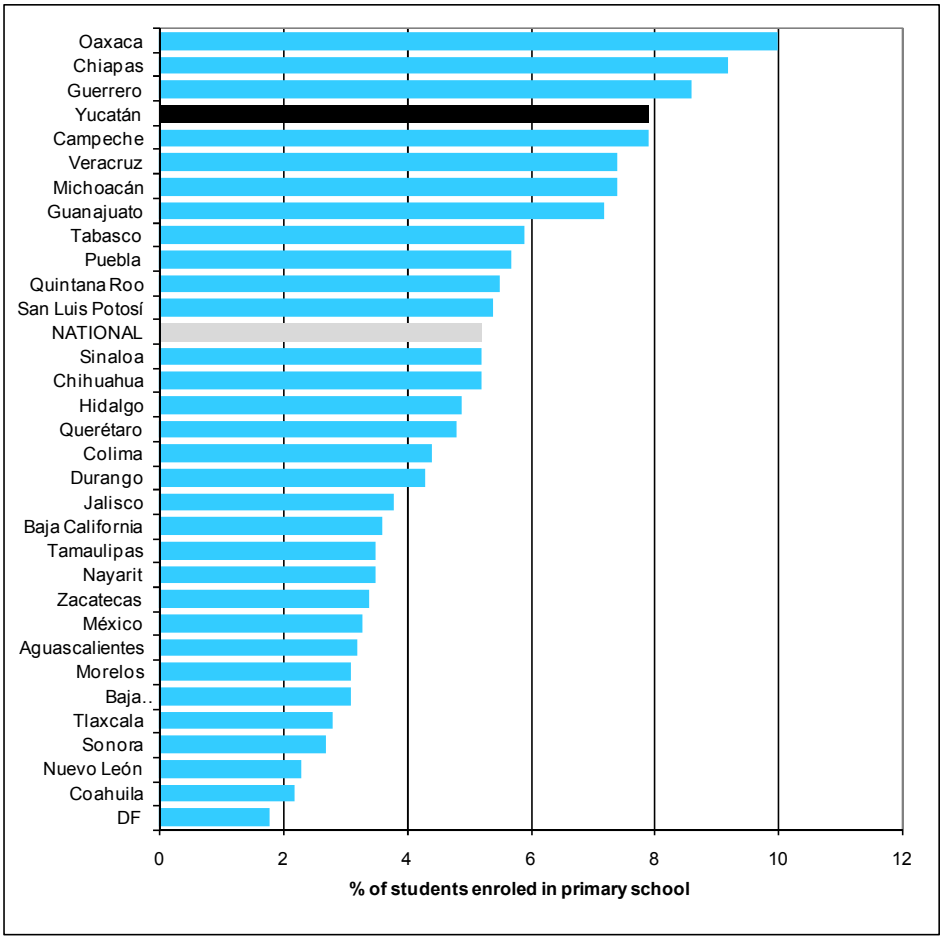


Source: Secretaría de Educación del Estado de Yucatán (2007) Indicadores Estadísticos por Nivel

The possible social division that access to high-school and university level education may bring about is aggravated by the geographical concentration of the population obtaining such degrees. More than three-quarters of high-school students in Yucatán are concentrated in only 10% of the municipalities. Tertiary education is even more concentrated. Nearly 90% of all college students are concentrated in 3 municipalities part of Mérida's functional area. In fact, Mérida alone concentrates 83% of college education. In spite of such great concentration of tertiary education, Mérida is still far away from OECD levels. The proportion of people with university degrees in Mérida stands below 5% whereas Istanbul in Turkey or Krakow a city of comparable size in Poland (both placed at the lowest levels among OECD metro-regions) more than double that share (Figure 1.31).

Figure 1.30 **Quality of Education among Mexican States**

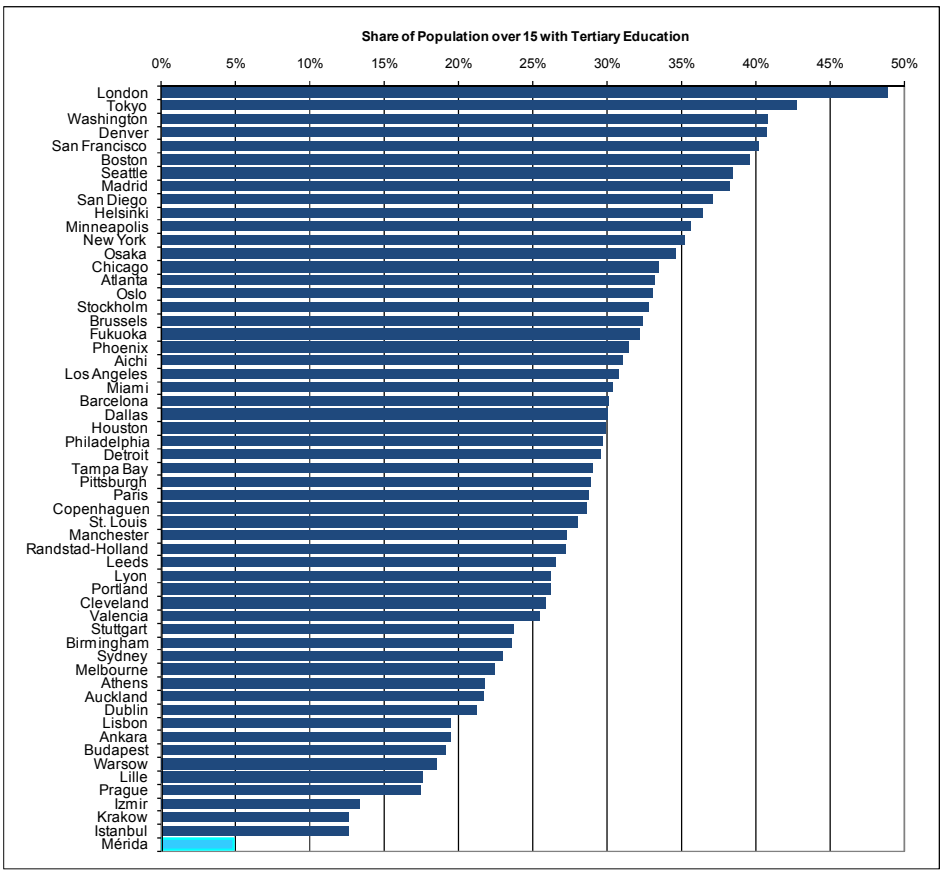
Percentage of Failings of Total Primary -School Enrolment



Source: Instituto Nacional para la Evaluación Educativa (2006) La Calidad de la Educación Básica Ayer, Hoy y Mañana

Figure 1.31 **Skills in OECD Metro-regions and Mérida**

Population with tertiary education as a proportion of population over 15 years old



Source: OECD (2006b) Metropolitan Database and SIMBAD (2007a) Censo General de Población 2000

Higher Education Institutions (HEI) and the labour market

Yucatán runs the risk of overcrowding degrees in management and overlook cluster-policy objectives in IT and engineering fields. The bulk of tertiary skills being acquired in Yucatán are on the fields of business and social issues, whereas engineering, medicine and technology lag behind. If all degrees related to the former are taken into account, more than two-thirds

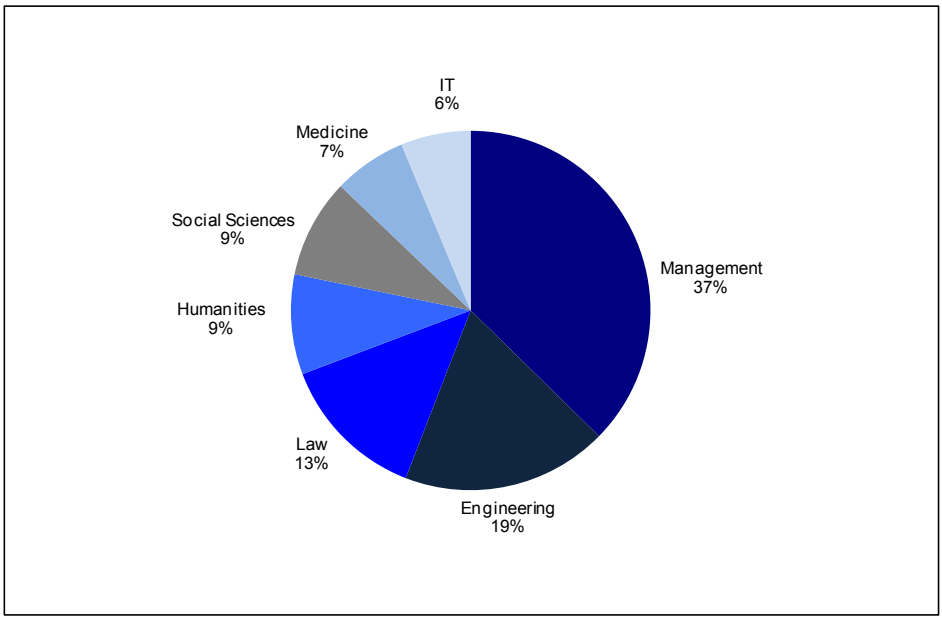
of the skills in Yucatán are being developed in these areas. In contrast, only 19% of skills are in engineering, 7% in medical-care areas (medicine, nurses, nutrition, odontology) and 6% in IT (Figure 1.32). While it is important to upgrade capacities in businesses through education, there is a risk of overproducing managers, accountants and lawyers as half of Yucatán's skills are either on Management –particularly accounting and business management- or Law. In contrast, IT which is being proposed as a cluster development area is still a small fraction of all degrees.

Although concentration of tertiary education is a common feature in OECD regions, Yucatán displays standards beyond any OECD country. Yucatán concentrates nearly 90% of the university degrees in Mérida's functional area, whereas 10% of Mexican regions concentrate around 60% of tertiary education (Figure 1.33).[6] Even in Australia and Canada where their large sizes implies concentration of activity in few places stand at distant second and third places. Similarly, Spain and Italy with similar business structures as those of Yucatán have much lower concentration indicators (around 43% and 18% respectively). Since this chapter has provide evidence on the fact that regional economic growth in Mexico has been partly driven by tertiary education, it is important to highlight that in Yucatán the benefits of such education are almost exclusively present in Mérida's functional area.

Both, training for workers and technical degrees are also concentrated in Mérida and not fully seized. Around 90% of all training for work financed by the Mexican Ministry of Labour through the State Training-Scholarships Programme is allocated to Mérida's functional area. Similarly, 93% of all technical-professional degrees in Yucatán are based in the capital.[7] If the economy's main sectors are in need of technical staff or trained personnel they are likely to find it almost exclusively in Mérida, furthering concentration and polarisation in the state. Availability of technicians may also be a problem even in Mérida, as the state prepares as much as two and a half times more university-degree professionals than technicians. These limitations should be important for commerce and services, but critical in manufacturing.

Figure 1.32 Degrees Awarded by Universities in Yucatán

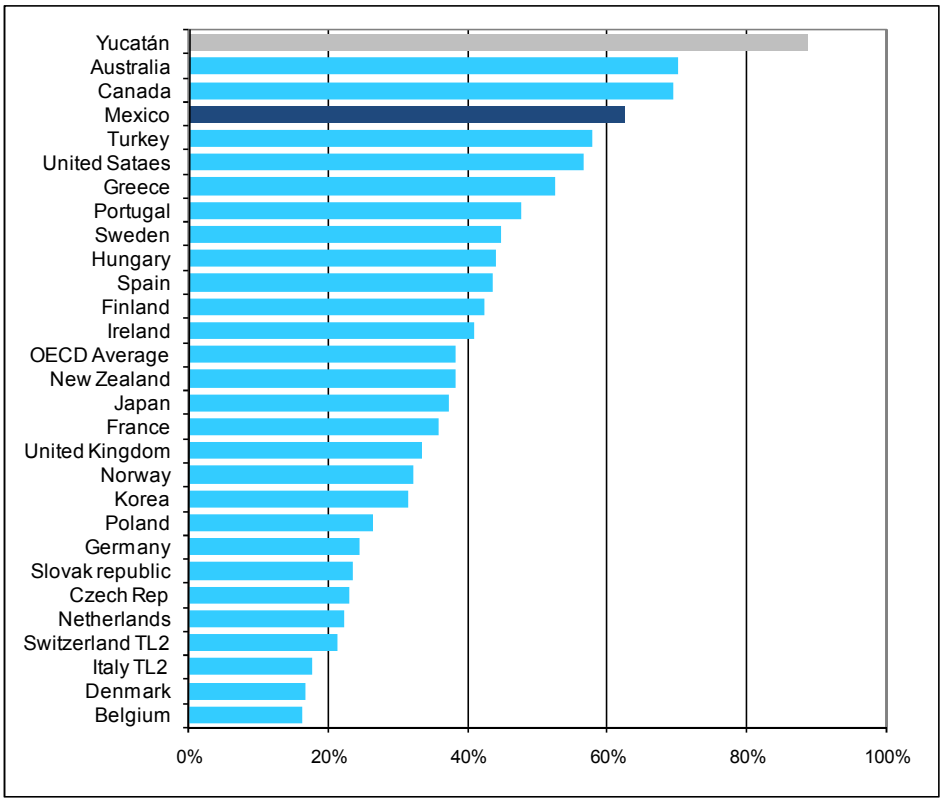
by Areas of Study in 2002



Source: ANUIES (2004) Anuario Estadístico 2003

Figure 1.33 **Concentration of Skills in the OECD and Yucatán**

Concentration of population with a university degree in 10% of the regions



Source: OECD (2005) Regions at a Glance and SIMBAD (2007a) Censo General de Población 2000

Opportunities in innovation

Innovation is not a driver of regional growth in Mexico yet, but there is potential to become so in the future and given the size of Yucatán's economy, the state is doing faire progress. The bulk of R&D in Mexico is financed by the government through the National Council for Science and Technology (CONACYT). Yucatán is one of the states in México that spends more on R&D as a proportion of their regional GDP in Mexico (Figure 1.34). In spite Yucatán invests merely a fraction of GDP on R&D

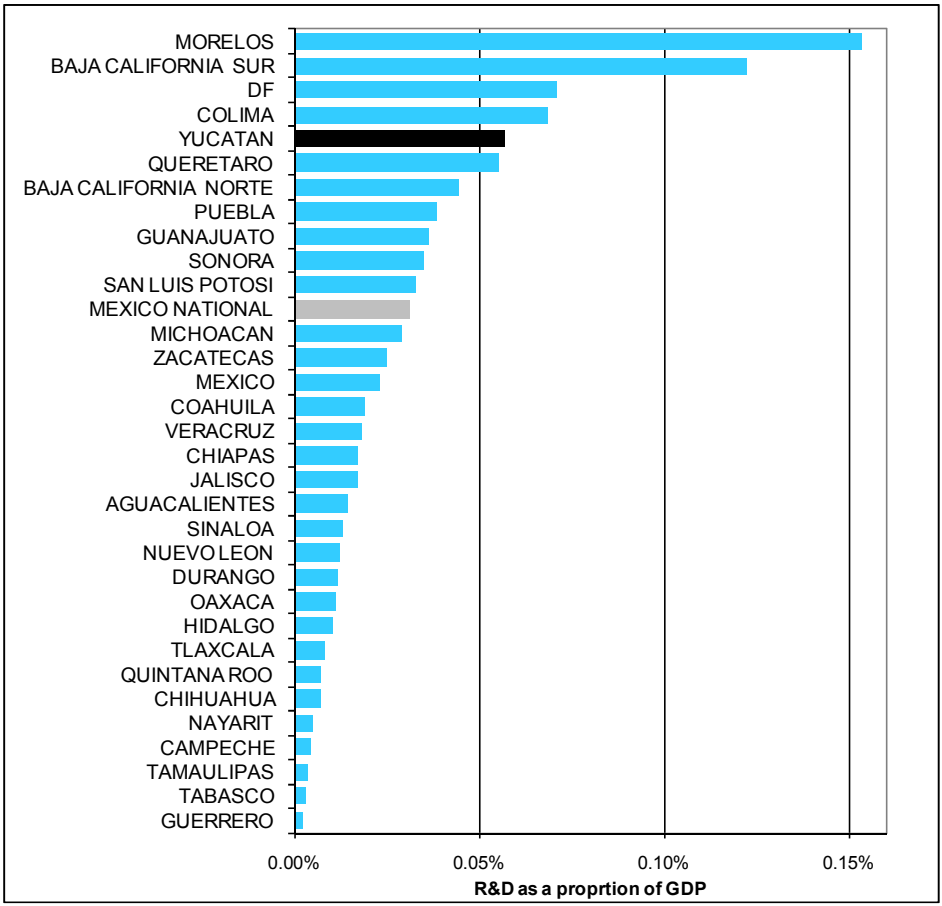
like in the rest of Mexico, it invests twice as much as the national average and outstrips FDI-based manufacturing-driven states such as Baja California, Jalisco, Nuevo León or Chihuahua. Moreover, the other states in the Peninsula and in fact, the entire South-Southeast Mexican region invest much less than Yucatán on innovation.

Balancing productive and social public investment

Public investment in Mexico has not supported private investment growth. While public investment as a whole, was found not to be associated to regional growth in Mexico (see Table 1.4), certain types of investment such as roads are related to such economic expansion. Economic dynamism can be boosted when economic agents – among which firms and workers – find the right environment and conditions to invest, save or spend among other things. In Mexico, public investment has not had that effect over private decisions of investment; assets constituting public investment have been inversely correlated to growth in private capital (Figure 1.35). Perhaps part of that public investment may have rightfully been allocated to social targets and compensate poorer regions for lagging income hoping that that will be enough to spur growth. However, it is possible that fewer productive investment projects aiming at luring private investment or spurring the expansion of existing firms might have taken place.

Figure 1.34 **Innovation in Mexican States**

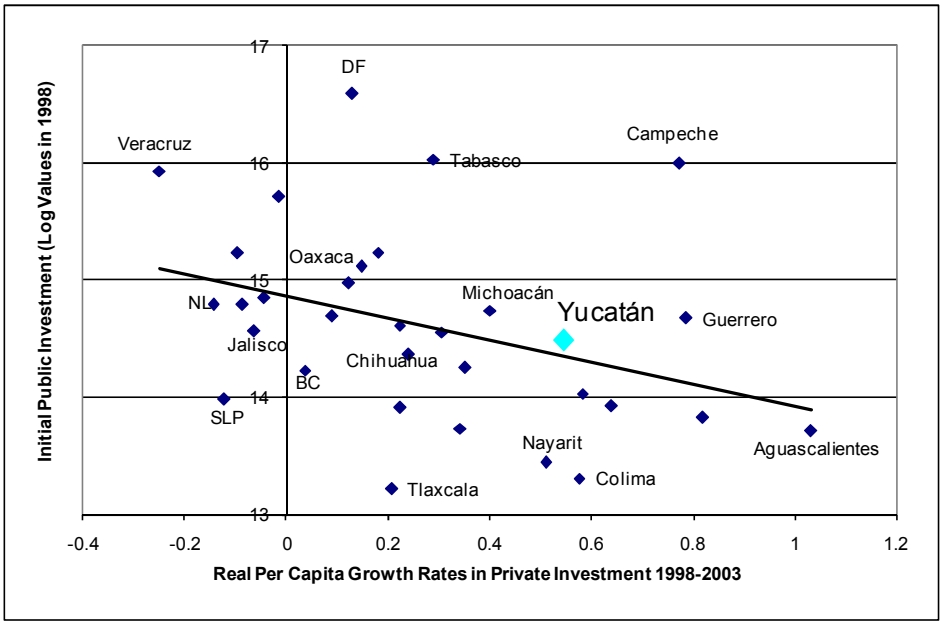
Funds allocated by the National Council for Science and Technology for R&D



Source: Own calculations based on CONACYT(2007) and INEGI (2007a)

Figure 1.35 **Lack of Association between Public and Private Investment in Mexico**

Real Per Capita Growth in Private Investment and Total Capital Expenditures in Mexico in 1998 by State

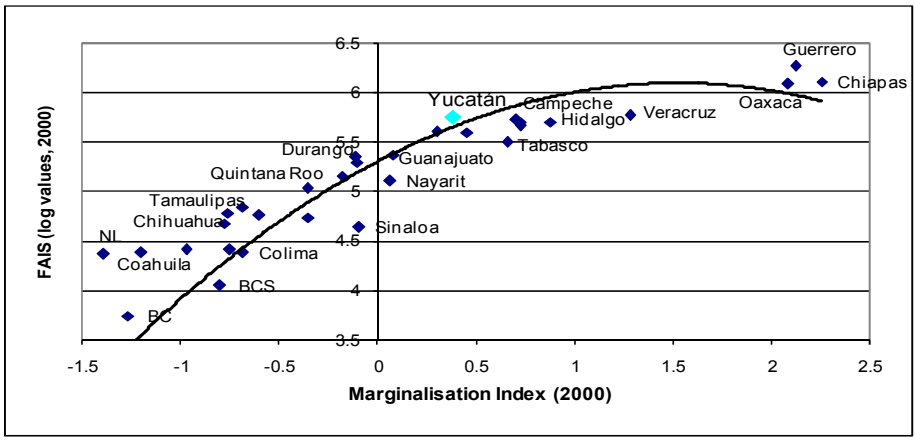


Source: Own Calculations based on data in INEGI (2007a)

Not only is public investment unrelated to private investment growth, but social infrastructure has not been enough to reduce regional disparities in Mexico. Besides promoting growth through competitiveness, regional policies also have the objective of reducing disparities through compensation mechanisms. This old policy dilemma of choosing between efficiency and equity has been addressed in Mexico by embracing the latter.

Figure 1.36 **Social Infrastructure and Marginalisation**

Marginalisation Index and FAIS fund logged values in 2000



Source: Own calculations based on World Bank (2006) and CONAPO (2000a)

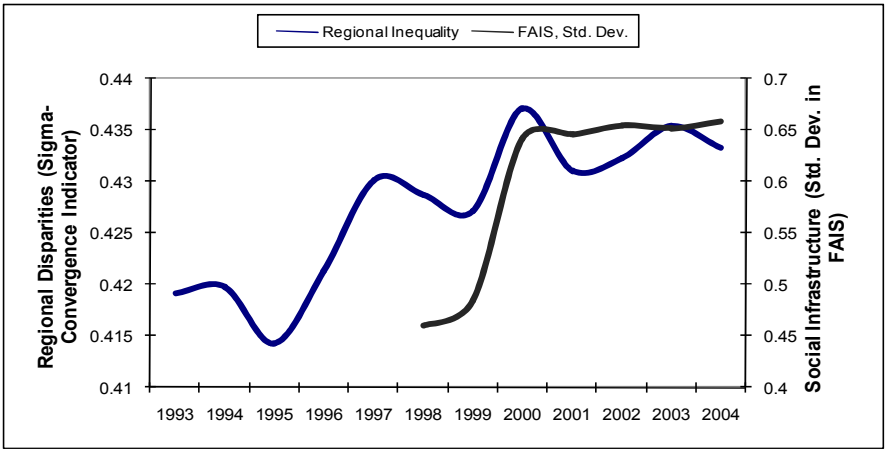
While equity is desirable, compensation mechanisms might be necessary but not sufficient to close inequality gaps. Indeed, social infrastructure in Mexican states has been channelled since 1998, through the Social Infrastructure Fund (FAIS) allocating resources to target poverty and marginalisation. As a result, FAIS transfers show a direct relationship to marginalisation-index values by state (Figure 1.36). Moreover, the gap showing FAIS-resources allocation (standard deviation) has widened importantly which implies increasing social infrastructure resources for poorer states. Nevertheless, regional disparities in Mexico have continued to expand (Figure 1.37).

Yucatán's municipalities spend more on public works and social infrastructure than do municipalities in other states. However, as in the case in most states, a larger share of municipal spending is dedicated to administration (Figure 1.38). Overall, administrative concepts such as staff, as well as inputs and services make up half of gross spending. Nevertheless, total municipal spending in Yucatán on public and social infrastructure exceeds average total municipal spending in this category for other states. In Yucatán, as in Mexico, is necessary to promote efficiency in municipal spending and orienting investment to productive projects supportive of private investment. Having said that, chapter 3 shows that state spending in Yucatán is even more focused on staff than in

infrastructure as opposed to municipality spending (compare Figures 1.38 and 3.7)

Figure 1.37 **Regional Disparities and Social Infrastructure in Mexico**

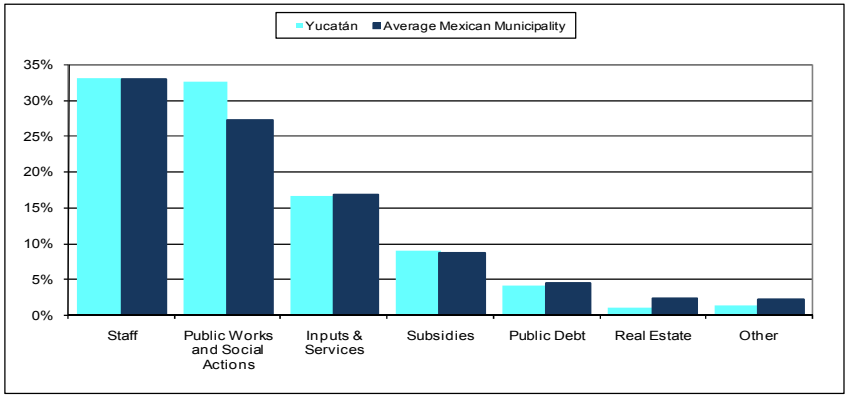
Sigma-convergence indicators and standard deviation of FAIS allocation of funds by state



Source: Own Calculation with data from INEGI (2007a) and World Bank (2006)

Figure 1.38 **Municipalities' Public Spending in Yucatán and Mexican States**

Composition of gross spending in municipalities in 2004



Source: SIMBAD (2007b) Public Finance in Mexican States 1995-2005

Seizing markets and trade opportunities

The rising trend of FDI flows and trade around the world signal an international division of labour that is related to a comparative advantage of producing parts of a commodity in different locations. In that sense, many regions in various countries have emerged as strategic locations based on effective cost reductions, lower transportation costs – or trade costs more generally – as well as backward and forward linkages up and down the productive chain, among other factors. China, India and some countries in Latin America such as Mexico, Costa Rica and Brazil are increasingly playing more important roles in this global production network.

One of the salient features of global competition is that it is marked by effectiveness not only on cost, but also on time. Hence, systems that have long been used for optimum-stock effectiveness such as Just in Time, have been recently stressed as a source of regional competitive advantages as locations nearer to the market enjoy the possibility of implementing such systems that allow to compete in the market not only on the basis of cost, but also on the basis of market changes and flexibility.

The aforementioned countries and more importantly China, has become a major global player in manufacturing production and has attracted an increasing FDI share of the world and indeed of flows directed to emerging economies. The country is no longer related to labour-intensive processes exclusively, but nowadays production is also related to high-tech activities, higher value-added processes and capital-intensive industries. Therefore, research and development has flourished in the region and design and engineering activities have in some occasions been migrating to that country.

Like China, Brazil and Costa Rica are also representing competition for Mexican manufacturing, and although border-states in Mexico have enjoyed the benefits of proximity to the US market, the country has not seized the opportunity of logistics and maritime transportation. With many Chinese, Brazilian and Central American products being transported by boat, distance to the market becomes an important factor again. Yucatán is only a few hundred miles away from Florida and makes it a strategic location not only for manufacturing transport to the USA, but also to Central America. However, efficiency in port management and timely deliveries are increasingly important as competition from many of Latin American and Chinese regions are aiming at improving the efficiency and reducing the time to delivery products in the USA. Yucatán therefore is in a strategic location to benefit from proximity, but the proper institutional arrangements should also be pursued in order to spur efficiency in Yucatán's port (Progreso).

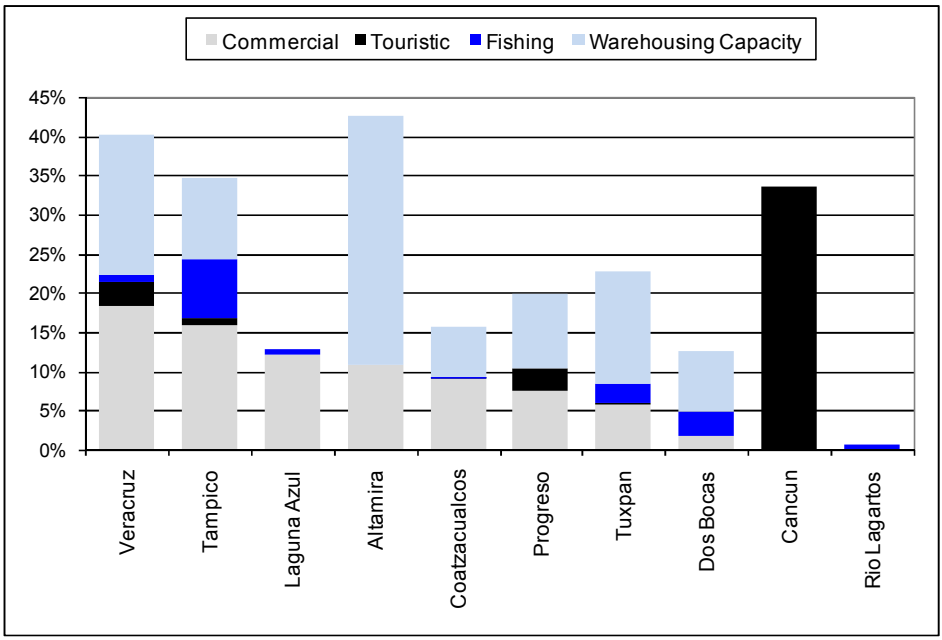
Proximity to markets, trade arrangements and logistics

The possibilities for the Yucatán economy increase by the fact that already close locations such as the USA and Central American economies just got closer by trade liberalisation. The North American Free Trade Agreement (NAFTA) has been favouring manufacturing location in Mexico and indeed in Yucatán during the 1990s whereas the Central American Free Trade Agreement (CAFTA) promises to open opportunities to integrate manufacturing production chains in the region and to boost agricultural produce exchange.

The Port of Progreso is one of the most important ports, yet under-utilised potential on the Gulf and Caribbean coasts. It is the 6th port on the coast in terms of total docking capacity and commercial-activities, and the 5th in terms of warehousing capacity (Figure 1.39). Regarding commercial activity, Progreso is the most important port, not only in the Peninsula, but also excelling Dos Bocas in Tabasco or Tuxpan in Veracruz and with volumes comparable to Coatzacoalcos in Veracruz or Altamira in Tamaulipas. Similarly, warehousing capacity is greater in Progreso than in Coatzacualcos or Dos Bocas and comparable to that of the second largest port on the coast, Tampico. Yet, despite of a sizeable capacity; Progreso trades just half of the volume managed by Tampico (Figure 1.40). Moreover, Progreso's trade is almost entirely based on imports, which reflects the untapped potential of the port. Finally, despite Yucatan's extraordinary cultural, archaeological and natural tourist offer, infrastructure to receive boat passengers is not comparable to those of commercial inward-looking activities.

Figure 1.39 **Port Infrastructure in the Gulf and the Caribbean**

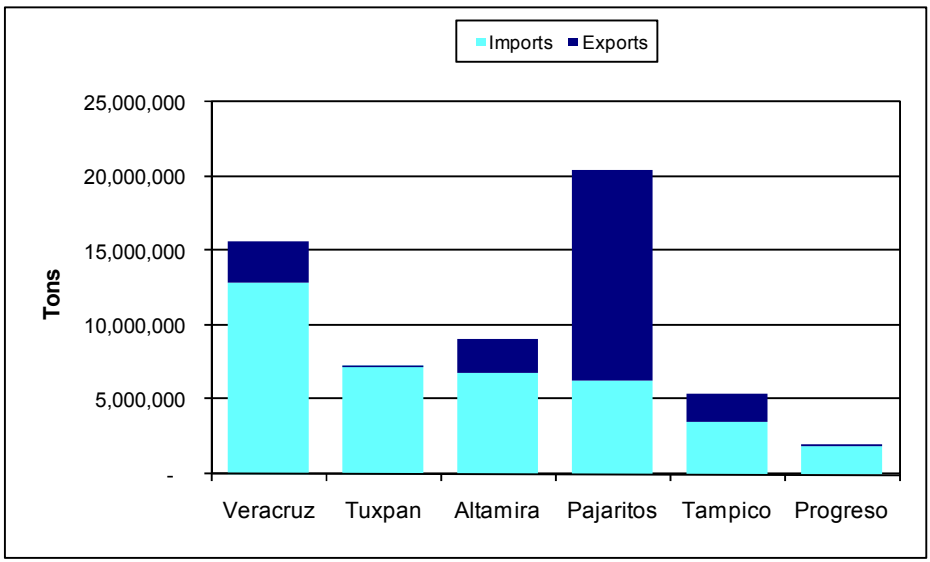
Docking areas by sector and storage capacity



Source: SCT (2007) Informe Estadistico de los Puertos de Mexico 2006

Figure 1.40 **International Trade in Most Important Ports in the Gulf-Caribbean Coast**

Imports and exports by volume values as shares of total trade



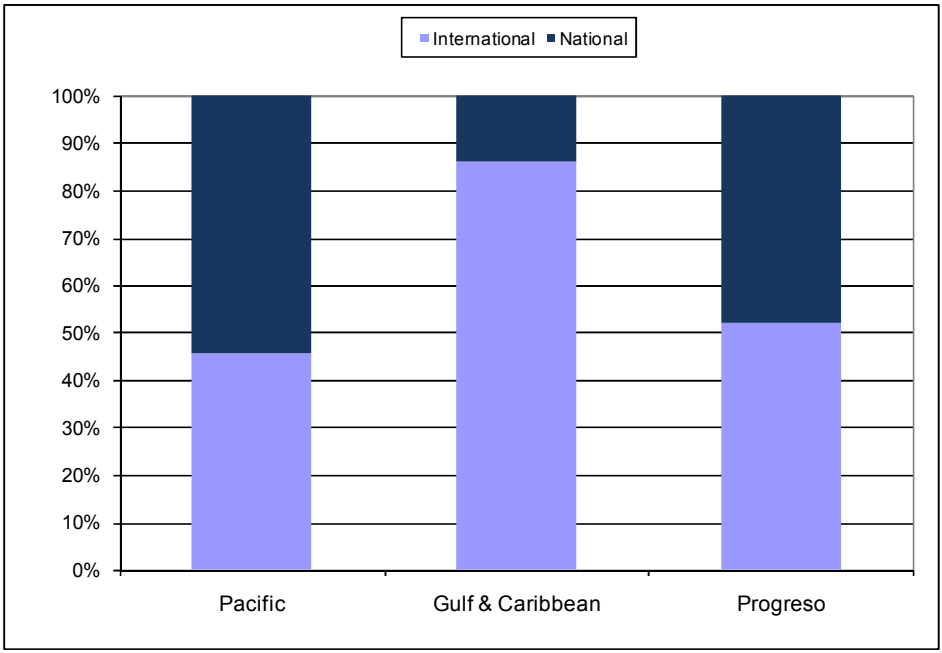
Source: SCT (2007) Informe Estadistico de los Puertos de Mexico 2006

Progreso is a port with a profile resembling more Pacific coast type of trade rather than that of the Gulf and Caribbean coast. Progreso's trade is almost equitably divided between cabotage and international trade, whereas ports on the Gulf and Caribbean coast are almost 90% dedicated to international rather than domestic trade (Figure 1.41).

Despite improved infrastructure, port efficiency in Progreso is low and declining. Competitive shipping costs imply appropriate infrastructure, timing and port efficiency are crucial to enhance trade opportunities and investment. Although infrastructure has been continuously upgraded at Progreso, port efficiency measured in terms of shipment volume per hour in operation remains low compared to other ports in the Gulf/Caribbean coast (Figure 1.42). What is more, compared to 2005 performance, the Port of Progreso has seen its efficiency diminished. Lowering shipping costs through improved infrastructure efficiency could boost trade and investment in Yucatán.[8] If Mexico managed to improve port efficiency to French or Swedish levels, trade would increase by 12% in the country (Blazquez-Lidoy, Rodriguez and Santiso, 2006).

Figure 1.41 **Port Activity Compared**

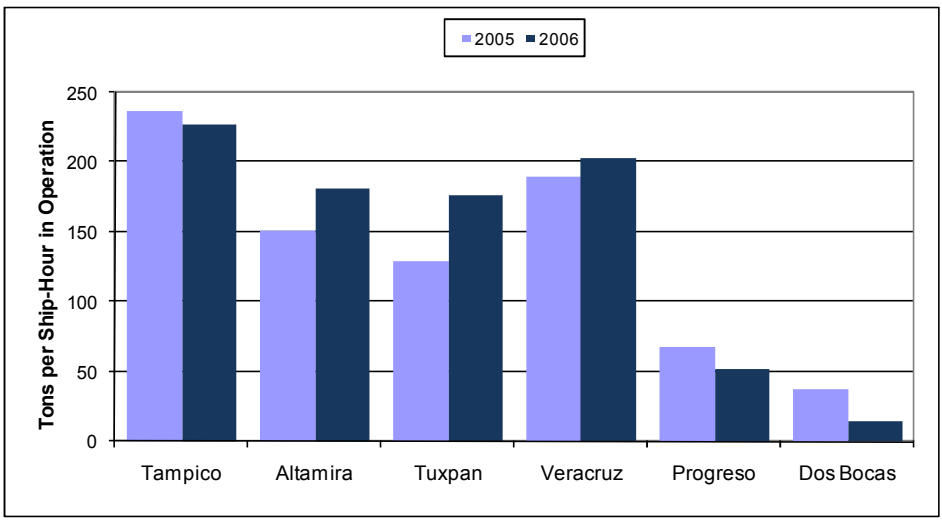
Ports on both Mexican coasts by navigation type



Source: SCT (2007) Informe Estadistico de los Puertos de Mexico 2006

Figure 1.42 **Efficiency in Selected Gulf-Caribbean Coast Ports**

Productivity of ports measured by volume of shipment per hour



Source: SCT (2007 and 2006) Informe Estadístico de los Puertos de México 2006, and 2005

The prospects of reaping the benefits of logistics in Yucatán are subject to undertaking the necessary steps to develop a multimodal transportation system. Competitive logistics hubs around the globe nowadays require the efficient combination of different transportation modes. It is crucial that the appropriate urban developments are made to connect roads, motorways, railways, airports and sea ports in order to fully exploit the benefits of logistics. Moreover, a logistics hub will imply the development of services around it to guarantee delivery times, regularity and frequency of services and direct service without transhipment or warehousing en route (Devaci, Cerit and Tuna, 2002).

Challenges and opportunities in manufacturing and agricultural produce

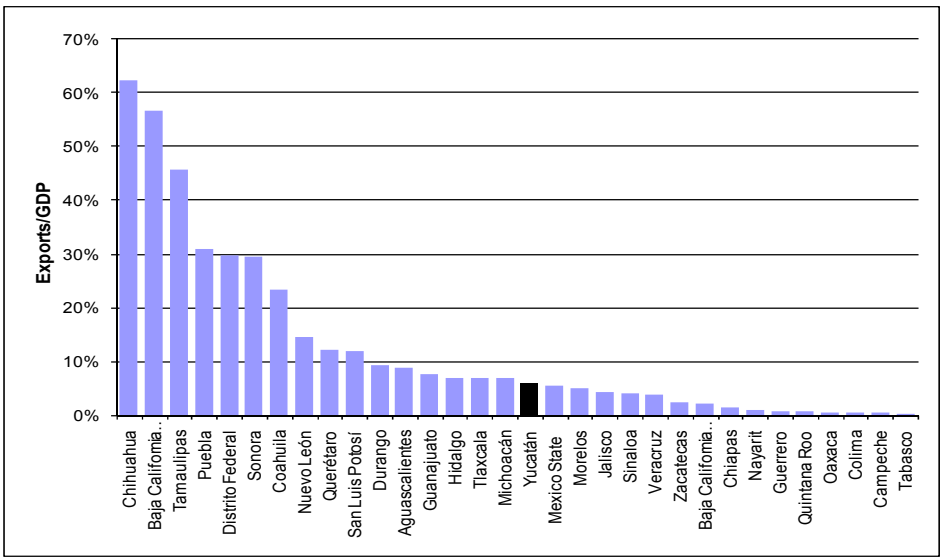
Mexico has benefited from a new development model based on free trade. Although Mexico has signed free trade agreements with more than 30 countries including the European Union, the North American Free Trade Agreement (NAFTA) in effect since 1994, represents the core of the Mexican trade strategy. In a few years of operation, NAFTA has highlighted the importance of trade for the country. When Mexico accessed

the General Agreement on Tariffs and Trade (GATT) in 1985, trade represented only around one-fourth of GDP, by 2000 trade represented around 70% of GDP (Rodríguez-Pose and Sánchez-Reaza, 2003).

Although Yucatán has experienced rapid exports' growth, the state has not yet fully reached its trading potential. State's exports represent just over 6% of GDP (Figure 1.43). However, Yucatán is the state in all southern Mexico with the highest proportion of exports to GDP. In part, growth of exports in Yucatán is fuelled by textiles activities representing nearly half of the state's exports. Fishing and other sea-related activities make up for another 35% (Figure 1.44).

Figure 1.43 Importance of Exports in Mexican States

Exports as a proportion of GDP

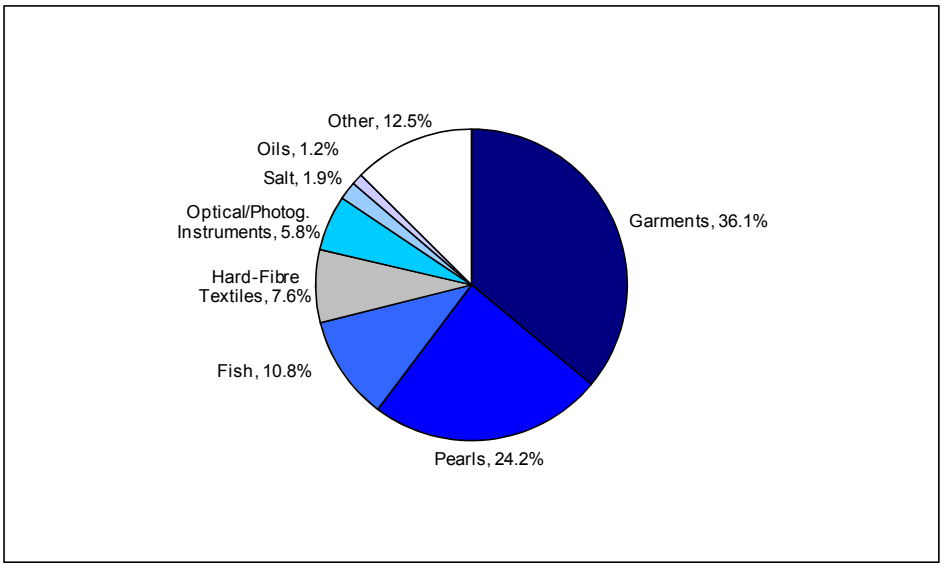


Figures refer to 2000 as that was the latest available data for exports (current prices) at the state level for all Mexican states and expressed in pesos using an average of monthly exchange rates for USD-Mexican Pesos at the end of the period. GDP figures are in current prices for 2000.

Data for exports refer to non-oil activities; thus, the two main oil-producer states, Campeche and Tabasco display poor performances.

Source: INEGI (2007a) and BANCOMEXT (2002)

Figure 1.44 **Yucatán's Exports by Groups of Products**



Figures for 1998 are the latest at this disaggregated level and are intended as an illustration

Source: BANCOMEXT (2002)

The state's agricultural activities have experienced a surge in international markets partly thanks to activities that use technology more intensively, such as agro-industry. Fishing and agro-industrial activities concentrate almost entirely Yucatan's agricultural exports (Figure 1.45). However, in recent years farming activities have started to emerge as an export sector. In contrast, cattle-raising has contracted in spite it is one of Mexico's most important pork producers. Yet, markets for Yucatecan pork have remained regional and at best, domestic.

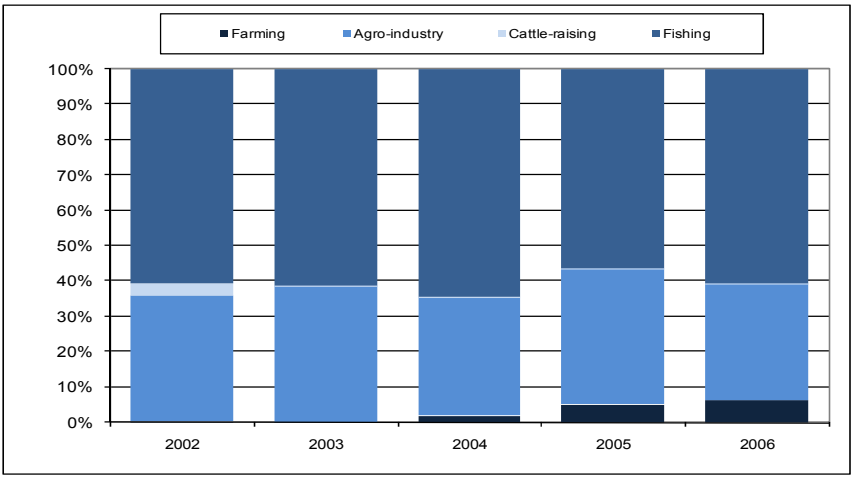
In general, the same strengths that contribute to quality of life in Yucatán also play an important role in regional competitiveness and offer further opportunities for investment and economic development. The state is strategically located within a growing and relatively prosperous region of approximately three million inhabitants. Mérida is currently the commercial and services hub of this region. The state's location is also advantageous with respect to the greater Mesoamerican region, including areas of Central America, the Caribbean and southern United States.

Due to Mérida's role as a primate city, however, and tremendous differences in economic structure and livelihoods, it makes sense to discuss

key industries and comparative advantages for the metropolitan region and rural areas separately. In addition, since comparative advantages tend to be geographically localised, focusing on Mérida and rural areas of Yucatán individually facilitates consideration of equity issues.

Figure 1.45 **Exports in the Agricultural Sector in Yucatan**

by subsector of activity (2001-2006)



Source: Gobierno del Estado de Yucatán with information from Mexico's Customs Administration

Mérida's economy is largely service-based. Key sectors in terms of employment are concentrated in wholesale and retail trade, construction, personal and professional services, and the production of clothing and apparel (Table 1.5). The 15 sectors below represent more than 40% of total employment in the state capital (but less than 24% of gross regional product).

Employment in commerce and services, however, is driven, at least initially, by export industries. With limited exceptions, Yucatán generally lacks major export industries and those industries that do export, such as clothing and apparel production, are among the least productive sectors in the state (Table 1.6).

Much of the growth in Yucatán's commercial and services sectors during the past three decades may be attributed to the rapid growth of Campeche and Quintana Roo, neighbouring states in the Yucatán Peninsula. As these states develop their export sectors (tourism and petroleum, respectively), they are also expanding their service industries. There is

nothing preordained about Mérida's role as the commercial and services hub of the Yucatán Peninsula. The city's dominance in services was built in the early part of the 20th century due to the henequen industry, at a time when it was the only major city in the Peninsula. Its current position is the result of an initial advantage over other regions and historical accident but is in jeopardy of decline. One of the key observations for policymakers in Yucatán is the need to re-establish export industries as a means of reinvigorating the services sector and protecting and enhancing quality of life in Mérida

Yucatán is a lagging region relative to the rest of Mexico. This gap is further confirmed by the generally low levels of productivity, even in Mérida, where value-added averages $11 864 USD per worker.[9] Key sectors in terms of productivity include a variety of tourism-related services, food processing and beverage production, and transportation and logistics industries (Table 1.5).

Better infrastructure, climate, and location, as well as Mérida's relatively well-educated workforce, the metropolitan area has several distinct comparative advantages relative to the rest of the Yucatán Peninsula and the Mesoamerican region. Its location and infrastructure offer a clear opportunity to serve as a key logistics, distribution, and processing point for parts of Central America, southern Mexico, the Caribbean, and the United States. These logistics and processing activities are desirable because they generally exhibit relatively high levels of productivity (Table 1.5).

Although higher education and health care do not display particularly high levels of value-added per worker, these sectors are likely to grow substantially in the coming decades (Table 1.6). Relative to its neighbours in southern Mexico, Mérida is well positioned in this regard with highly trained medical personnel and university faculty. In addition, infrastructure is in place in both sectors to meet future growth, with at least four first rate hospitals and more than a dozen major public and private universities.

Finally, tourism represents a clear comparative advantage for Mérida. Several tourism-related industries are among the greatest job generators (lodging, restaurants) and most productive sectors (transport) in the metropolitan region (Tables 1.5 and 1.6). The primary challenge for local policymakers is to achieve an appropriate balance between heritage, cultural and massive tourism and to take advantage of Yucatán's proximity to Cancún and the almost seven million annual visitors to the Mayan Riviera.

Table 1.5 **Top 15 Employers in Yucatán**

Sector	Employment	Value Added *(000s USD)*	Value Added per Worker *(USD)*
Food retailing	12187	54684	4487
Manufacture of clothing and apparel	9249	58082	6280
Non-residential construction	7406	31803	4294
Self-service retailing	6182	46944	7594
Residential construction	6161	39659	6437
Take-out restaurants	5859	18262	3117
Primary, secondary and special education schools	5857	31732	5418
Production of bread products and tortillas	4764	66416	13941
Hardware stores	4517	46895	10382
Employment services	4239	27006	6371
Restaurants with waiting services	4200	18288	4354
Repair and maintenance of motor vehicles	4028	16659	4136
Department stores	3569	34363	9628
Wholesale trade of raw materials for industry	3476	62960	18113
Wholesale trade of food products	3426	21072	6151

Source: INEGI (2004) Economic Census 2004

Table 1.6 **Selected Key Industries in Mérida**

Sector	Employment	Value-Added *(000s $US)*	Value-Added per Worker *($US)*
Milling of grains and oil seeds	845	56640	67030
Manufacture of cement and concrete products	1240	62407	50328
Regular air transport	642	26120	40686
Manufacture of beverages	2712	97297	35876
Manufacture of plastic products	2094	72189	34474
General cargo transport	1064	23170	21776
Specialised cargo transport	621	11386	18335
Manufacture of heating and air conditioning systems	583	9424	16164
Preparation of bread and tortilla products	4764	66416	13941
Services related to ground transportation	588	6834	11622
Manufacture of non-metallic mineral products	512	5830	11387
Other food production	1348	13485	10003
Hospitals and specialised medical care	749	6427	8581
Slaughter, processing and packing of meat products	1418	11812	8330
Colleges and universities	2486	19812	7970
Manufacture of medical, dental, laboratory equipment	936	6975	7452
Lodging	3347	22800	6812
Assembly of garments and apparel	9249	58082	6280
Manufacture of metal products and wrought iron	1740	10178	5849
Weaving of textile products and threads	1269	6896	5434
Manufacture of furniture, except office furniture	1391	7038	5060
Assembly of other textile products, except apparel	1034	5173	5003
Manufacture of other wood products	609	2212	3632

Source: INEGI (2004) Economic Census 2004

In rural areas of Yucatán, agriculture remains the primary economic activity for a large segment of the population. More than 100 000 people in rural areas of the state earn their livelihoods in farming, fishing, forestry or livestock production, representing approximately 25% of employment outside the state capital (INEGI, 2000). With the exception of the poultry and pork industries, which are dominated by large national agro-industrial firms, the bulk of agricultural production is relatively small-scale for local markets or subsistence consumption (Table 1.7).

Rural areas even in exports and manufacturing sectors typically display lower levels of productivity than Mérida. Productivity differentials between them stand at approximately 45%. However, high value-added per worker can be found primarily in several food-processing industries (Table 1.8).[10] In contrast, lower productivity levels can even be found in manufacturing such as clothing and other textile products in Yucatán display especially low levels of productivity. Moreover, important export activities such as fishing or activities that fuel imports – particularly grains – through the Port of Progreso, such as the production of bread and tortilla are also notable for their low productivity.

Given the importance of the primary sector in terms of employment, and the relatively high levels of productivity in food production, the comparative advantage of rural areas of Yucatán clearly lies in the processing and packaging of agricultural and livestock commodities, particularly pork and poultry. In addition, opportunities exist in relatively large-scale agro-industrial production, including aquaculture (shrimp and tilapia, for example), as well as traditional fishing activities (fish, octopus, lobster). Furthermore, in light of the high levels of output per unit of land for certain horticultural commodities (honey, papaya, chile habanero, coconut and cucumber, for example), an opportunity exists not only to link small-scale growers with food retailers and export markets, but also to process and package these products as a means of adding value and creating additional economic opportunities in rural areas of the state. In short, the challenge for policymakers is to evolve from mere agricultural production to processing activities that generate greater value-added.

Table 1.7 **Top Agricultural Products**

Product	Harvest *(ha)*	Output *(metric tons)*	$US per kilo	Value *($US millions)*	Value per HA of Land *($US)*
Pork	NA	87374	2.36	206.3	NA
Poultry	NA	108020	1.53	165.7	NA
Beef	NA	34518	2.31	79.9	NA
Eggs	NA	71209	0.97	69.0	NA
Maize	146052	125294	0.16	19.7	135
Honey	NA	9375	2.03	19.0	NA
Papaya	1011	69495	0.16	10.9	10781
Oranges	14500	184697	0.05	8.8	607
Limes	3194	69221	0.06	4.0	1252
Chile habanero	655	3295	0.94	3.1	4733
Watermelon	796	12323	0.15	1.9	2387
Henequen	9707	4486	0.38	1.7	175
Coconut	360	7807	0.18	1.4	3889
Cucumber	363	7140	0.20	1.4	3857
Avocado	540	10499	0.12	1.3	2407

Source: INEGI (2004) Economic Census 2004

Table 1.8 **Key Activities in Rural Areas**

Sector	Employment	Value Added *(000s $US)*	Value Added per Worker *($US)*
Preparation and packaging of fish and seafood	454	9429	20768
Intermediation services for cargo transport	229	4394	19188
Services related to water transport	719	12032	16734
Other food industries	738	10927	14806
Finishing and covering of textiles	879	12652	14394
Manufacture of cement and other concrete products	717	9347	13036
Slaughter, processing and packing of meat products	1845	22310	12092
Manufacture of accessories for clothing and apparel	105	1123	10699
Manufacture of electronic components	368	3674	9984
General cargo transport	396	3951	9976
Aquaculture	336	2964	8822
Mining of non-metallic minerals	1133	9350	8252
Production of feed for animals	403	3094	7677
Manufacture of plastic products	458	3475	7588
Canning of fruits, vegetables and prepared foods	123	782	6356
Specialised cargo transport	210	1299	6186
Manufacture of cloth	844	4678	5542
Assembly of clothing and apparel	17489	85615	4895
Lodging	1280	6034	4714
Fishing	9980	40534	4061
Manufacture of footwear	1677	5733	3419
Manufacture of beverages	586	1839	3139
Manufacture of metal structures and wrought iron	746	1935	2594
Manufacture of other leather and hide products	332	823	2480
Manufacture of bread and tortilla products	4951	11941	2412
Water transport for tourism	176	408	2317
Manufacture of furniture, except office furniture	421	912	2167
Manufacture of other wood products	555	1056	1903
Assembly of other textile products, excluding clothing	4810	2175	452
Knitting of clothing and apparel	1158	503	434

Source: INEGI (2004) Economic Census 2004

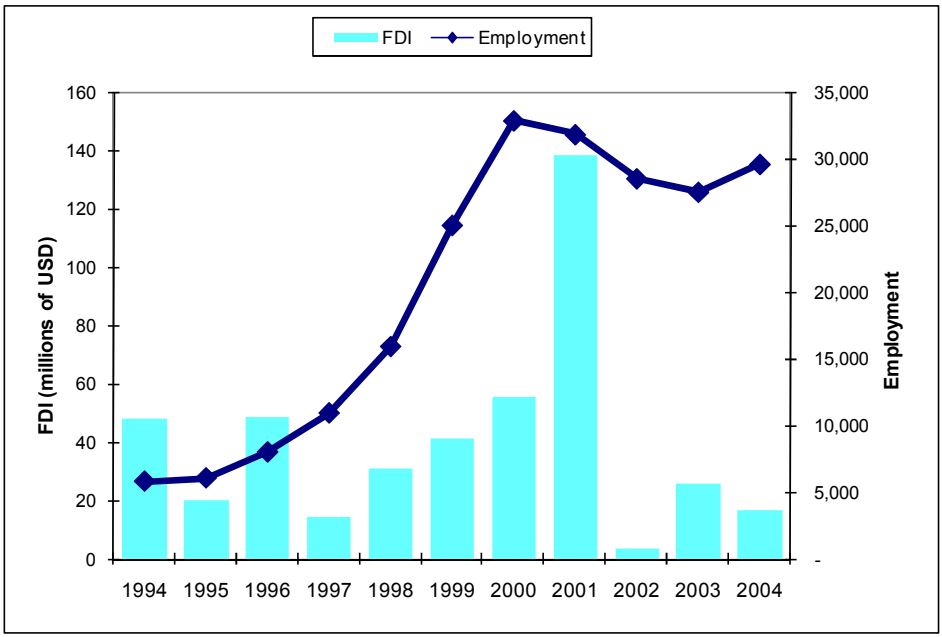
FDI attraction

Yucatán has in the past, managed to attract growing flows of FDI to urban and rural areas, but a recent slowdown in demand has raised questions about the long-term prospects of the industry. After the success in attracting FDI, Yucatán suffered a setback –like in many states in Mexico- after the US recession. However, if flows were cut by half and some firms closed down or left the state, employment levels in maquiladora have not experienced the same loss (Figure 1.46). In fact, jobs have started to pick up. Recently, investment has been channelled mainly to three sectors. First, agro-industrial projects that are based on labour costs and other concessions or incentives from the state government. Second, the financial services sector, which has come under control of foreign banks and are, in any case controlled by corporate offices in Mexico City or Monterrey in northern Mexico. Third, other services which are likely related to tourism.

Undoubtedly robust growth rates that made of Yucatán one of the fastest regional economies in the OECD resided in FDI and maquiladora activities. At the peak of the maquiladora activity in 2000-2001, the vast majority of these export-oriented firms produced clothing and apparel for markets in the USA, accounting for almost 10% of total national employment in clothing and apparel *maquiladoras*. At that time, *maquiladoras* accounted for one-third of total manufacturing employment and more than two-thirds of total exports in Yucatán (Secretaría de Desarrollo Industrial, 2000). Nowadays, opportunities for investment exist in tourism, processed food products, horticultural and agro-industrial products (papaya, chile habanero), transportation and logistics. State government officials have also supported development of clusters in two other industries: information technologies and furniture.

Figure 1.46 **FDI Flows and Maquiladora Employment in Yucatan**

1994-2004



Source: INEGI (2007a)

FDI has not delivered in Yucatán, all the benefits that usually brings about, but remains a source of employment particularly for rural areas. Although FDI in manufacturing and agriculture has had positive externalities by instilling good working practices, other benefits such as technology transfer, upgrading of human capital, and linkages with the local economy might have been more limited. Yet, approximately 60% of export-oriented employment remains in rural areas of Yucatán; key locations include Motul, Valladolid and Tizimín.

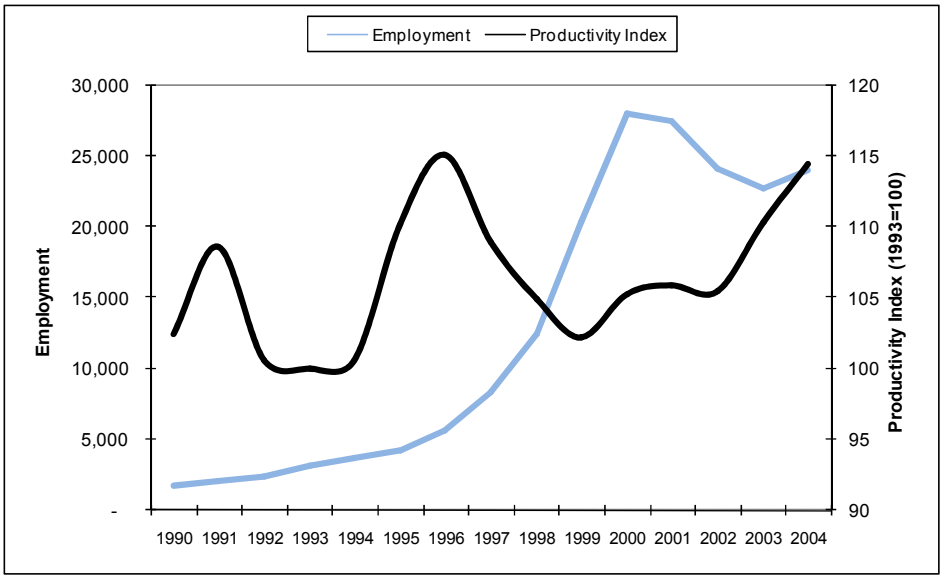
Table 1.9 **FDI by Sector in Yucatán**

1999-2005 in thousands of USD

Sector	1999	2000	2001	2002	2003	2004	2005
Agriculture and livestock	5	510	-6	265	1297	0	0
Mining	0	0	0	0	0	4	0
Manufacturing	25667	29421	27591	3810	8437	10392	4458
Electricity and water	0	0	0	5	0	0	0
Construction	69	508	0	5	4	2	3796
Wholesale and retail trade	225	26330	2946	-103	7687	-11	-1975
Transportation and communications	218	0	0	0	1106	-6649	-14168
Financial services	14214	2053	1339	-2079	4042	4668	4211
Other services	939	-3340	106455	1401	3143	8257	-825
Total	41336	55483	138325	3304	25716	16663	-4504

Source: INEGI (2007a)

Figure 1.47 **Employment and Productivity in Textiles Maquiladora**

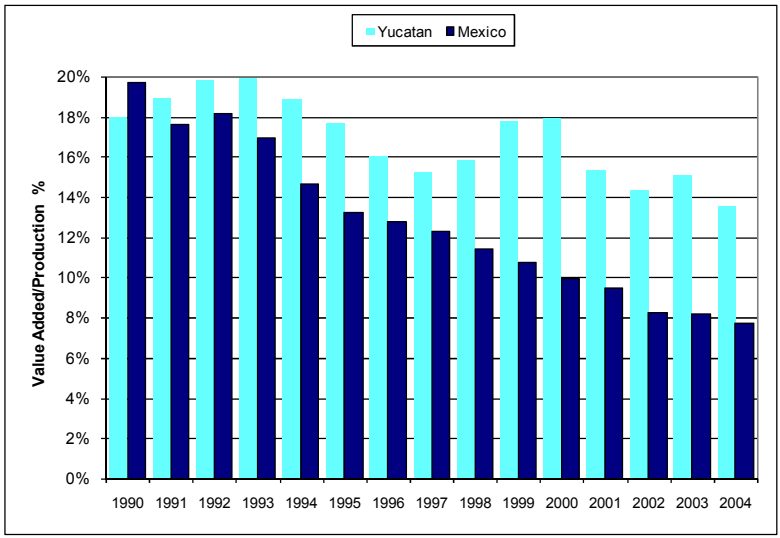


Source: INEGI (2007a)

Although recent trends in maquiladora activity and FDI flows in Yucatán are not positive, productivity growth and value-added in the sector are encouraging. Employment growth particularly after 1996 and until 2000 was associated to a sharp decline and later stagnation of productivity. In spite of modest employment recovery after 2000, productivity levels are at the highest in the industry's history in the state (Figure 1.47). As a result, the profile and competitiveness of the industry may have improved. Value-added as a proportion of production has waned, but compared to the country, the decline is less severe. In fact, Mexico's value-added as a proportion of maquiladora production is almost half of that of Yucatán (Figure 1.48).

Figure 1.48 **Value-Added in Maquiladora Activities in Mexico and Yucatán**

Value-added as a proportion of maquiladora's production



Source: INEGI (2007a)

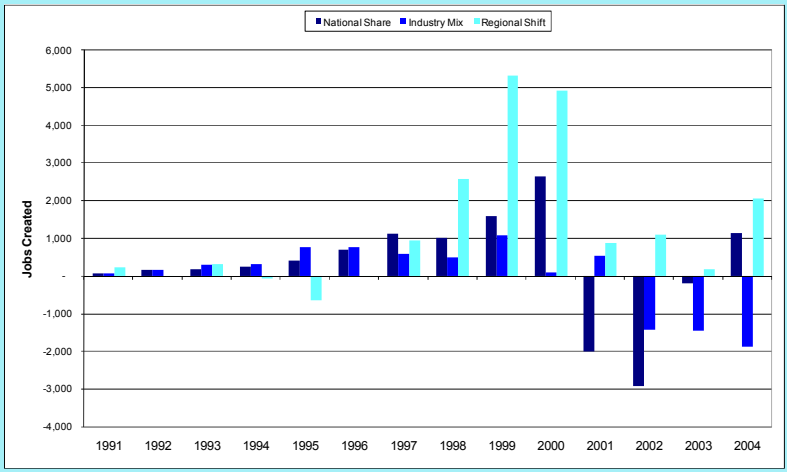
Box 1.2 **Explaining the Recent Decline of the Maquiladora Industry in Yucatán**

The relative importance of the diverse factors that have prompted the sudden demise of export-oriented production in Yucatán may be better understood by applying dynamic shift-and-share analysis, a simple analytical technique that decomposes annual change in economic structure into three components: national shift; industry mix; and regional competitiveness. The national shift component corresponds to the change in regional employment that may be attributed to macro-level forces beyond the borders of the study area. The industry mix effect expresses the expected change in employment had each sector of the regional economy followed its corresponding national growth rate; it represents a "proportional shift" due to differences between national and regional economic structures. The regional competitiveness component comprises a "differential shift" between sectoral growth rates at the regional and national levels that are the result of natural resource endowments, comparative advantage, entrepreneurial ability, and the effects of regional policy. The sum of national, industry mix and regional competitiveness components equals overall change in employment between two time periods (Munroe and Biles, 2004).

Box 1.2 **Explaining the Recent Decline of the Maquiladora Industry in Yucatán** *(cont.)*

In general, results reveal three periods of change in export-oriented production between 1991 and 2004. The first period, from 1991 to 1996, is marked by slow but steady growth of maquiladora production due primarily to national shift and industry mix factors. Between 1997 and 2000, however, the regional competitiveness component accounts for the majority of export-oriented job creation. This period roughly coincides with the efforts of the previous state government to promote the export-promotion industrialisation strategy. The final period of change in maquiladora growth begins in 2001. National shift and industry mix components turn sharply negative, reflecting the impact of recession in the United States on Mexico's export-oriented firms (national shift) and the emergence of competitors' – among which China – growing comparative advantage in clothing and apparel production (industry mix). The regional competitiveness component remains positive, which indicates that relative to the rest of Mexico, Yucatán retains a comparative advantage albeit in a declining industry.

Figure 1.49 **Shift-Share Analysis**



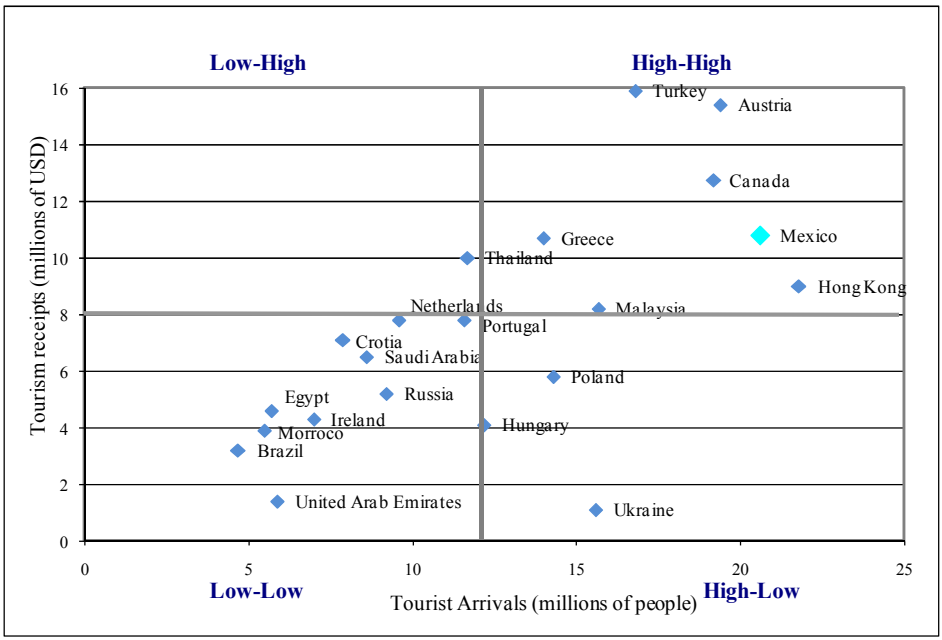
Source : Adapted from Biles (2004)

Competing in tourism

Mexico has not fully seized its tourism potential. Mexico is one of the top destinations in the world. Outside the first tier of world destinations for tourists (USA, France, Spain, China, UK and Germany), Mexico is one of the most visited countries in the world. In terms of number of tourists arrivals, Mexico is the second destination of its class (second-tier), and eight in the world. Although, Mexico is still part of the group of destinations receiving both, a large number of tourists and considerable receipts in terms of revenue, the country could even further benefit as countries with less tourism affluence such as Canada, Austria and Turkey receive greater monetary benefits (Figure 1.50).

Figure 1.50 **Tourism Arrivals and Receipts in Selected Countries**

Second-tier group of countries



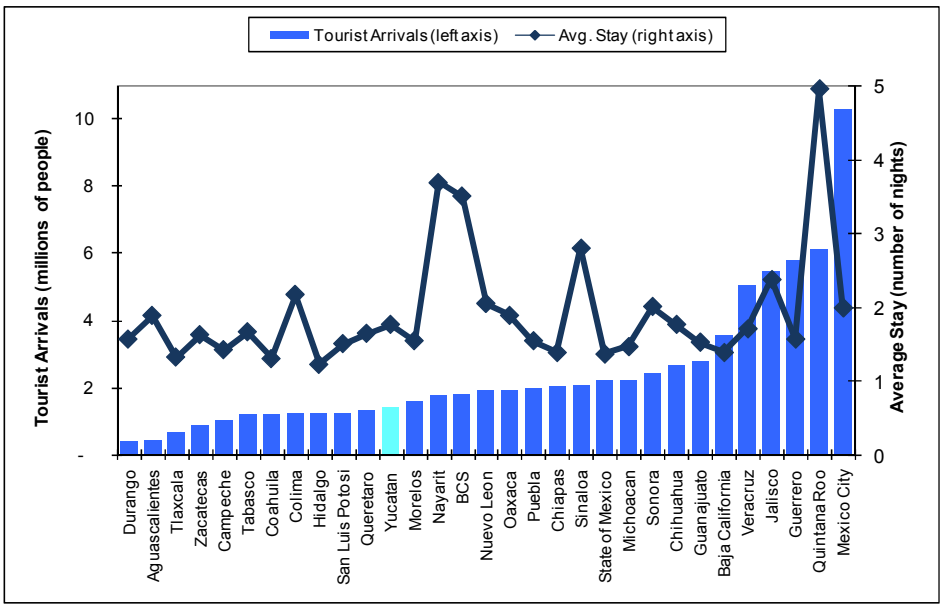
Source: World Tourism Organisation (2007)

Similarly to Mexico, Yucatán needs to better seize tourism opportunities. Yucatán provides a diverse array of tourism offerings,

including archaeological sites, beaches, eco- and adventure tourism, colonial cities, arts and culture. During 2005, the state received more than 1.4 million tourists. Yet, such a figure is low compared to other states in Mexico (Figure 1.51). More than three-quarters of visitors come from other regions of Mexico, representing more than 60% of total tourism expenditures in Yucatán. Therefore, the average stay in the state is less than 2 days whereas visitors using long-haul flights would typically require longer stays as in beach destinations such as those in Quintana Roo (Cancún), Baja California Sur (Los Cabos) or Sinaloa (Mazatlán).

Figure 1.51 **Tourism Attraction by Mexican States**

by arrivals and average stay in 2006



Data for Tamaulipas was not available. Data for all states refers to 2006 except for Coahuila for which the latest figure available is 2005.

Source: SECTUR (2007) DATATUR

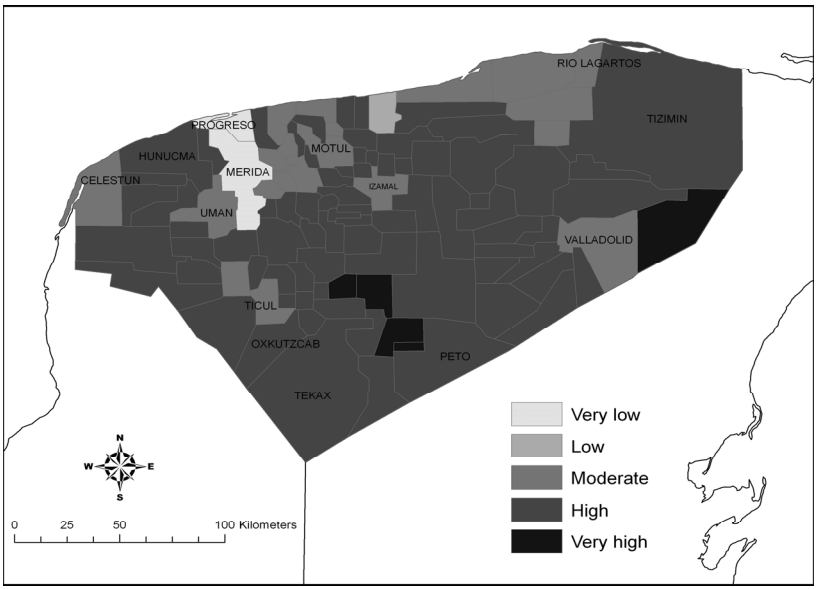
Poverty and marginalisation

Urban supremacy and growth: Mérida

In political and economic terms, Mérida functions as a classic primate city, and the concentration of political and economic power in the metropolitan region results in tremendous differences in income and employment and concomitant disparities with respect to economic opportunity and human development. For example, residents of Mérida and the surrounding metropolitan area generally earn per capita incomes of between $6 000 and $10 000 USD annually; almost 40% of inhabitants in rural areas, however, earn less than $2 500 (Figure 1.52). As a consequence, the resulting distribution of income in Yucatán is highly uneven, with a Gini coefficient of 0.60.

Not surprisingly, 57% of inhabitants outside the state capital live in areas of high or very high marginality (CONAPO, 2000a), typically characterised by some combination of low incomes, poor levels of education, and inadequate housing (Figure 1.52). With human development indices that range from 0.833 in Mérida to less than 0.530 (CONAPO, 2000b), in several municipalities (including Chemax and Tahdziú), the extreme variation in livelihoods in Yucatán is comparable to the gap between Switzerland and Morocco (based on standard deviation values derived from United Nations, 2007).

Figure 1.52 **Levels of Marginalisation in the State of Yucatán**

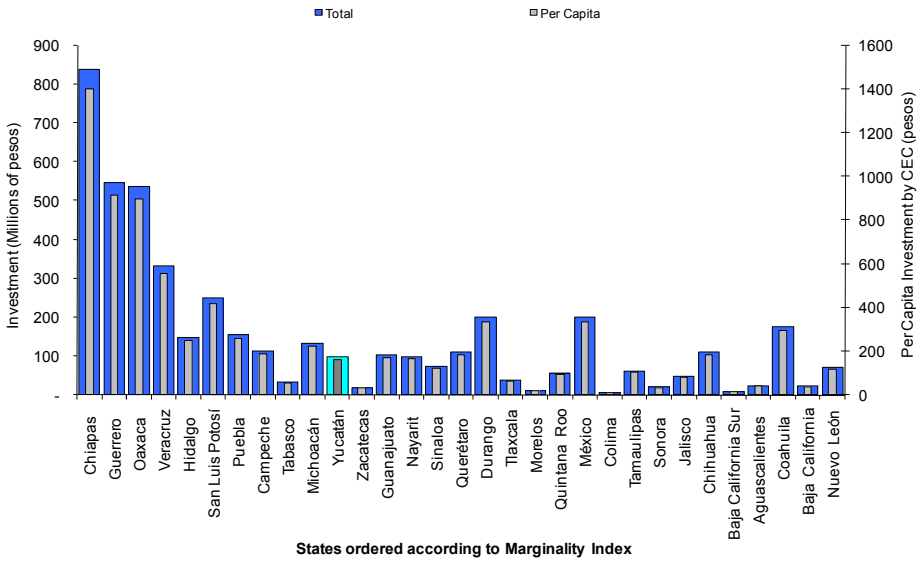


Source: CONAPO (2007)

Poverty has been tackled in Mexico with a territorial perspective. The Microrregiones Programme has allocated resources for poverty alleviation based on community centres where marginalisation is observed. Funds have been delivered according to state's level of marginalisation and they seem to be successful at allocating the lion's share to the four most marginalised states (Chiapas, Oaxaca, Guerrero and Veracruz). These resources also correspond to population in each of the community centres (CECs) to a degree that investment matches perfectly per capita investment by CEC (Figure 1.53). It is less clear though, if the resources correspond to each state's level of marginalisation after position 8 (Campeche). Whereas Yucatán receives fewer resources than Coahuila which is at the end of the marginalisation table, it also receives more than Tabasco which is more marginalised.

Figure 1.53 **Investment in Marginalised Regions in Mexico**

Investment made by the Microrregiones Programme on each state in



Source: OECD (2007a) Rural Policy Review: Mexico

Urban-Rural Linkages

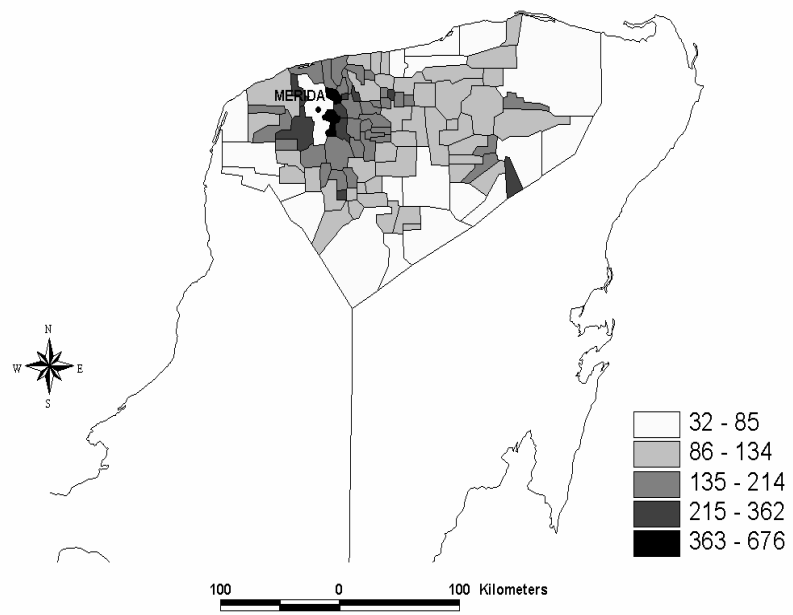
Due to the highly asymmetric functional economic relationship between Mérida and the rest of Yucatán, equity must be a fundamental concern in assessing the viability of policies for regional competitiveness. By employing a spatial multiplier technique, policymakers may visualise the geographic distribution of economic impacts. In essence, spatial multipliers recognise that economic activity in a given location generates impacts (employment, for example) not only locally, but also among other communities that are functionally linked within the regional economy (Biles, 2003).

Although activity in a given area in Yucatán brings about multiplier effects in other regions of the state, in many cases those benefits are concentrated in Mérida or in a handful of municipalities. Aggregate spatial multipliers for each of Yucatán's 106 municipalities show that the municipalities bordering Mérida produce the most significant spillover effects (Figure 1.54). For example, for every 1 000 jobs in the neighbouring

municipio of Kanasín, almost 680 additional employment opportunities in other locations are generated. Not coincidentally, more than 50% of these feedback effects are concentrated in Mérida. In the case of Mérida, spatial multiplier effects are far more constrained. In general, every 1 000 jobs in the state capital produce fewer than 60 employment opportunities in other municipios. These results corroborate the unequal economic relationship between Mérida and rural municipalities and suggest that policy aimed at dispersing economic activity to rural areas may have limited success because spatial spillovers are disproportionately concentrated in the state capital.

Figure 1.54 **Aggregate Spatial Multipliers**

Per 1 000 jobs



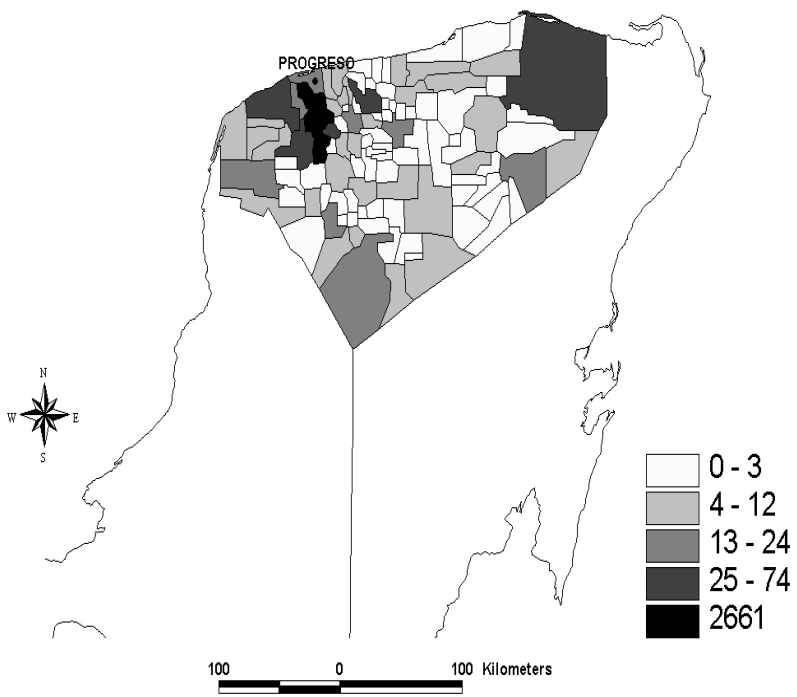
Source: Biles (2003)

The challenge for policymakers is made readily apparent by examining the geographic distribution of spatial multiplier effects among rural municipalities. In the case of the port city of Progreso, located about 30 kilometres North of Mérida, overall economic activity generates more

than 3 300 employment opportunities throughout the state. However, about 80% of all indirect job creation takes place within Mérida (Figure 1.55). Even in the case of Izamal, a representative town in Yucatán's interior, more than one-third of spillover effects occur in the state capital (Figure 1.56).

Figure 1.55 **Spatial Multiplier Effects in Progreso**

Per 1 000 jobs

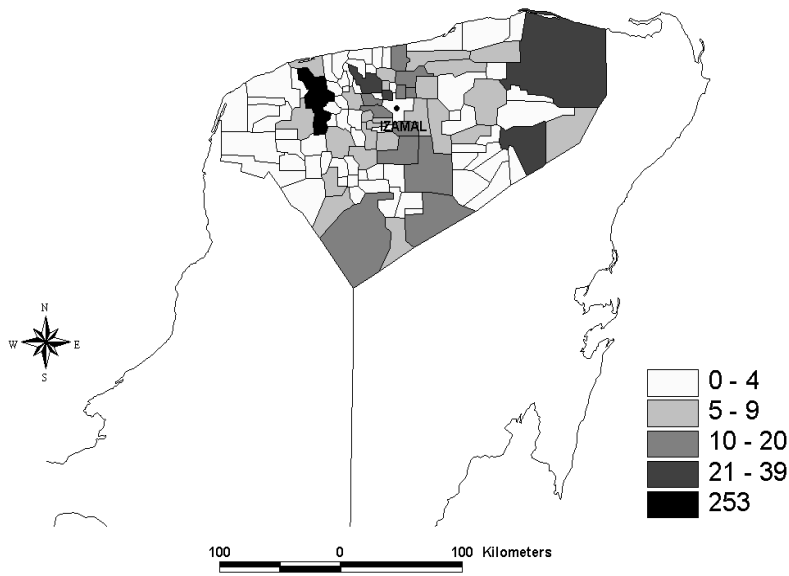


Source: Biles (2003)

However, the spatial multiplier effects for Valladolid, a relatively large municipio located halfway between Mérida and Cancún, provide a sharp contrast. Overall, economic activity in this municipality generates almost 1 400 additional job opportunities throughout the state (Figure 1.57). Relatively speaking, economic activity in Valladolid generates the most geographically diverse and balanced impacts. Mérida accounts for less than seven percent of total jobs created in Valladolid and feedback effects are dispersed throughout in the eastern part of the state.

Figure 1.56 **Spatial Multiplier Effects in Izamal**

Per 1 000 jobs



Source: Biles (2003)

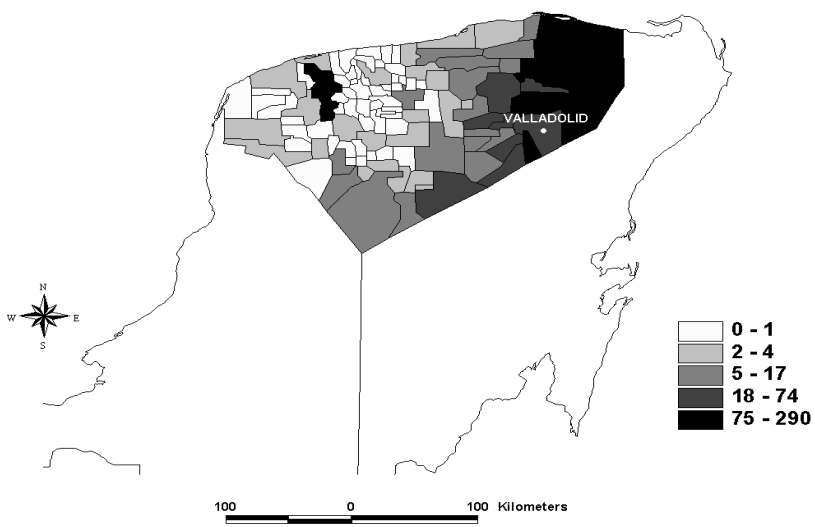
Resource allocation to peripheral locations may lead to positive impacts in a greater number of regions and a more balanced regional development. In general, the examples presented above provide some insights into the implications for regional policymaking in the case of Yucatán. Channelling economic activity to Mérida or nearby locations (such as Progreso) is unlikely to reduce disparities and promote more balanced regional development. In addition, concentration of economic activity in fairly distant municipios (such as Izamal) still results in a relatively unequal spatial distribution of benefits. The final example, however, suggests that a greater geographic balance in regional development might be obtained by concentrating additional economic activity or establishing growth poles in peripheral locations such as Valladolid.

Commuting and migration

Out-migration remains a concern in many rural areas. According to data from CONAPO (2005), Yucatán exhibited a slight net out-migration between 1990 and 2005, with a net loss of fewer than 4 000 inhabitants. These aggregate figures obscure a much more sober reality. The vast majority of the more than 160 000 in-migrants during this time settled in Mérida; the vast majority of the 170 000 out-migrants abandoned rural communities (the vast majority for employment in Cancún and the neighbouring state of Quintana Roo). The impacts of international migration, primarily to the United States, are also a major concern in many rural communities throughout Yucatán; since 1990 more than 34 000 Yucatecans have migrated internationally.

Figure 1.57 **Spatial Multiplier Effects in Valladolid**

Per 1 000 jobs



Source: Biles (2003)

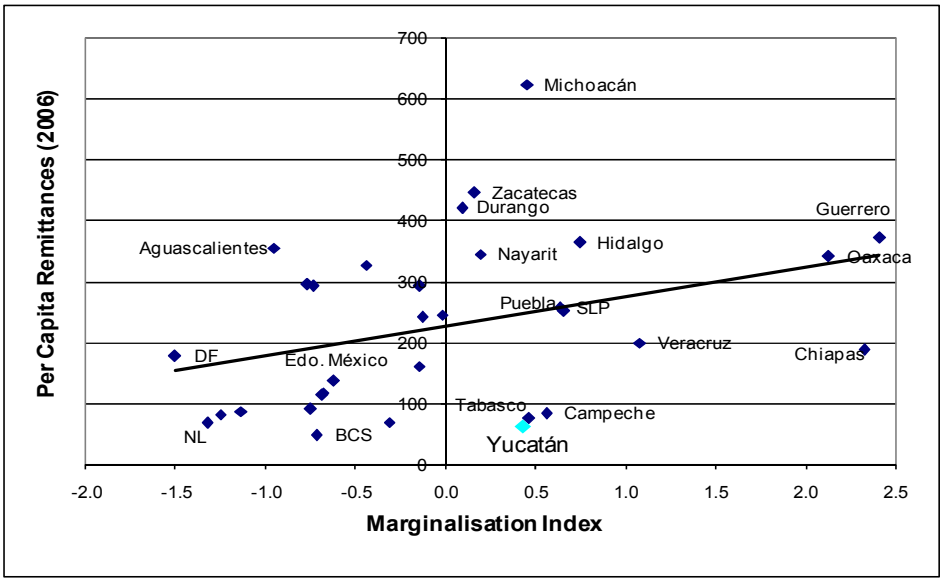
Remittances and long-term growth

Remittances have not only become the main source of foreign currency in the country after oil –excelling even FDI activities- but they also seem to

be a new source to alleviate marginalisation. There is a positive relationship between remittances received by Mexican states (in per capita terms) and their level of marginalisation (Figure 1.58). In the case of Yucatán, although per capita remittances are still low compared to states with higher migration rates such as Michoacán, Zacatecas or Guanajuato they have more than doubled in the past 4 years. In fact, Yucatán has experienced the second fastest growth rate in remittances flows in the country (Figure 1.59). It is not clear however, whether these resources have also helped to reduce intra-state disparities or if they have been concentrating in Mérida. In any case, they have the potential to reduce poverty and increase education levels, but it is less clear whether they have had an impact on business development and thereby have a direct impact on growth.

Figure 1.58 **Remittances and Marginalisation**

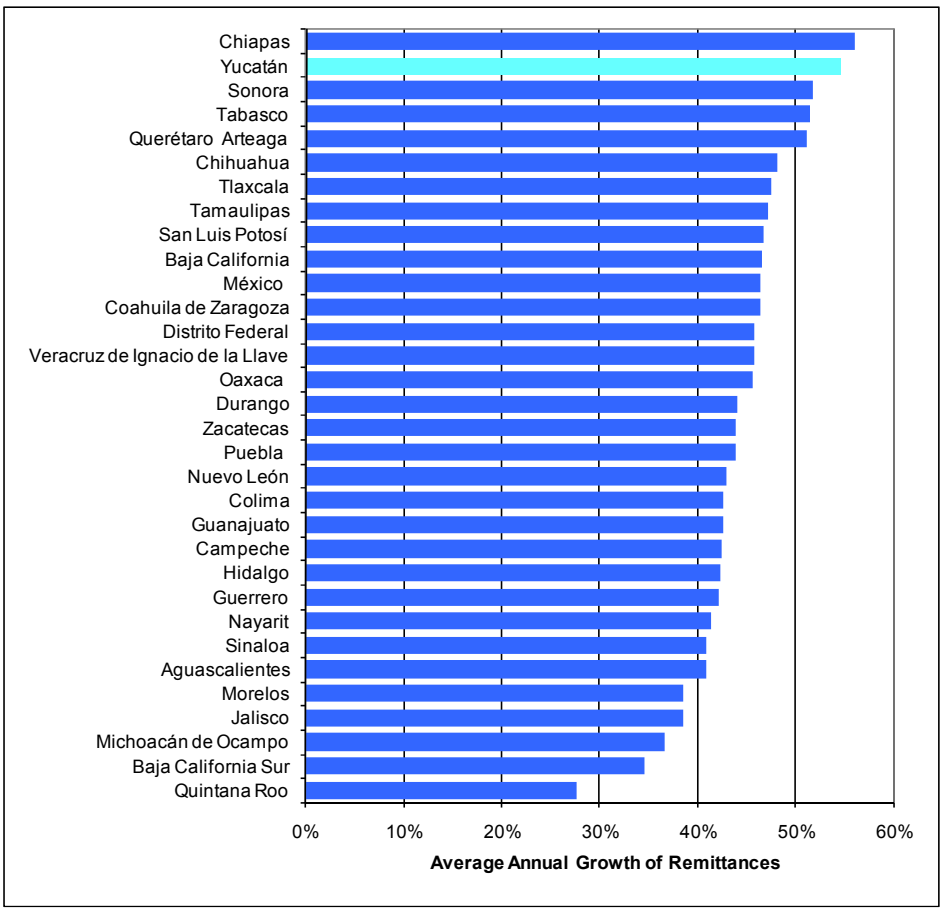
Per capita remittances (2006 values in USD) and marginalisation index (2005)



Source: CONAPO (2007) and INEGI (2007a)

Figure 1.59 **Growth in Remittances**

Average Annual Growth rates in Remittances by State (2003-2006)



Source: INEGI (2007a)

Environmental concerns

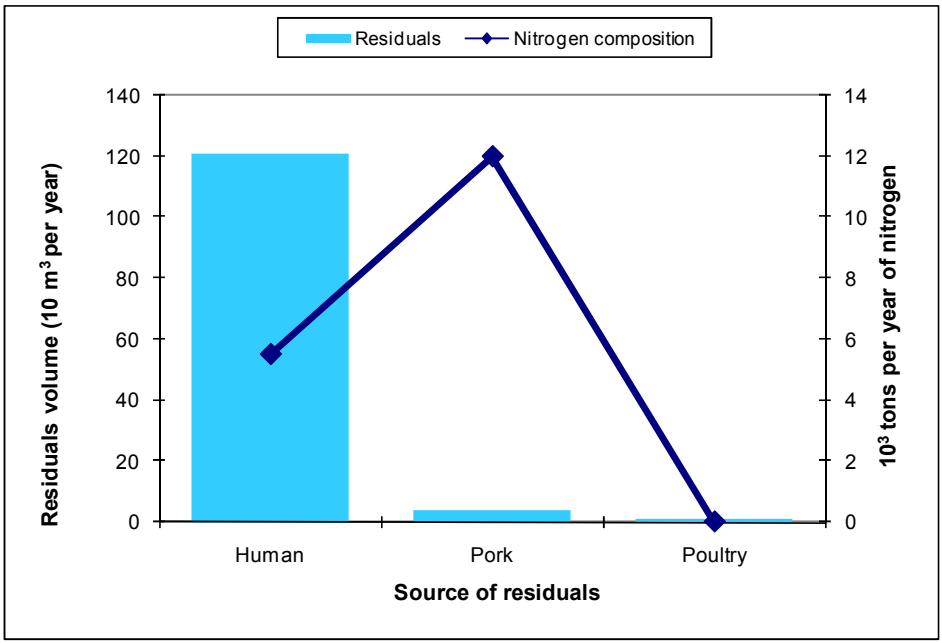
Notwithstanding the equity issues discussed above, quality of life is one of Yucatán's primary advantages due to abundant coastal and water resources, numerous cultural and tourism destinations, extensive physical infrastructure, attractive year-round climate, quality service providers, including education and health care, low levels of serious crime, high levels

of satisfaction, and a fair degree of social cohesion. However, quality of life in the medium to long-term is threatened by several environmental problems, including toxic waste and coastal pollution, noise and air quality. A number of economic concerns, related to the issue of equity, also jeopardise social cohesion and livelihoods, including low wages, lack of employment in the formal economy, and low levels of tax collection.

Probably the greatest challenge concerning sustainability lies in water treatment and provision of sewage in Yucatán. Water resources in the state are being polluted by both human and economic activity. Given the geological structure of Yucatán soil (is a karstic formation composed of limestone bedrock), introduction of sewage to the state's communities have been problematic. In fact, 45% of the population in Yucatán lacks sewage, a proportion that is nearly twice as much as the national average. Less than 7% of water residuals in the state are treated and only 1% of streets have public sewage in place (Gold, 2006). Human and animal waste filters down to the friatic layer polluting the same water resources that are later used for consumption and that ultimately end up in the sea. As a result, Yucatán holds the 5th place in the country when it comes to infectious intestinal diseases. In addition, nitrates in the state's water resources have exceeded official standards since 1987. As polluted water reaches the sea, the algal bloom or "red tide" has been having economic costs for fishing of around 6 million USD a year (figure for 2003).

Water treatment should not only be directed to human residuals, but also to address pollution by intensive farming, particularly in pork production. Similar to human residuals, animal farms using land intensively, particularly in pork and poultry production contaminate water in the friatic layer in the same fashion described above. Although the bulk of residual water is generated by human action, intensive farming particularly pork production entails more than twice nitrogen than human waste (Figure 1.60). Such organic resiudals are filtered-down into the friatic layer as treatment is almost negligable. Policy challenge resides in designing the appropriate instruments for water treatment for both human and farming residuals without harming economic activity.

Figure 1.60 **Residuals and Pollution of Water Resources in Yucatán**



Source: Gold (2006)

Communities are so dispersed that there is seldomly the critical mass to provide public services such as sewage, water treatment or waste collection. The state generates 130 000 tons of waste per year that due to lack of collection end up polluting land or in the sea. The linkages between what is consumed and disposed of in a community or place of production and the environmental impact in other communities or in the shore are evident. Contaminated water by Mérida and large communities' activities, as well as those in pork production, impinges on the quality of water elsewhere in the state and in agricultural activities. Although water treatment and waste disposal are municipal attributions, a wider, more comprehensive policy framework should address this concerns as the size of communities and municipalities prevents them from tackling this issues alone; all the more so, if the impact is felt in other communities.

Technical appendix: Estimation of spatial multipliers

The traditional economic base model distinguishes between two kinds of economic activity – basic and non-basic. As indicated in the identity below, total regional economic activity is merely the sum of basic and non-basic components:

(1) $E_T = E_B + E_{NB}$

where E_T refers to total economic activity, E_B indicates basic activity, and E_{NB} represents non-basic activity.

Basic (or export) activities serve demands beyond the boundaries of the region. The second type of economic activity is termed non-basic (or local). These activities serve demands within regional boundaries. The economic base model is premised on the fundamental assumption that non-basic economic activity depends on basic activities. Given the openness of local economies, the economic base multiplier may be recast by incorporating interaction among locations that make up the regional space-economy. In essence, the traditional economic base multiplier may be "expanded" as shown in Equation 2 below.

(2) $E_{Ti} = E_{NBi} + E_{Bi} + W_{ij}E_{Tj}$

$$E_{NBi} = (rE_{Ti})$$
$$E_{Ti} = rE_{Ti} + E_{Bi} + W_{ij}E_{Tj}$$
$$E_{Ti} - rE_{Ti} = E_{Bi} + W_{ij}E_{Tj}$$
$$E_{Ti}(1 - r) = E_{Bi} + W_{ij}E_{Tj}$$
$$E_{Ti} = 1/(1 - r)\,[E_{Bi} + W_{ij}E_{Tj}]$$
$$E_{Ti} = (1 - r)^{-1}[E_{Bi} + W_{ij}E_{Tj}]$$

In the expanded economic base multiplier proposed above, total economic activity within a particular sub-region (*i*) is a function not only of local basic sector activity (E_{Bi}), but also total economic activity in other locations ($W_{ij}E_{Tj}$). The term W_{ij} expresses the propensity for economic activity in other locations (*j*) to create additional economic activity in location (*i*). In the context of spatial econometrics, W_{ij} is called a spatial weights matrix.

In order to calibrate spatial economic base models, basic and total economic activity must be estimated for each of the sub-regions (*i*) making up a larger region (*A*). Sub-regions are defined as the 106 *municipios* comprising the state of Yucatán, Mexico. The traditional location quotient (LQ) approach is applied to sectorally disaggregate employment data (at the three-digit NAICS level) from the 2000 Census of Population to estimate

basic and total employment at the *municipio* level. The basic formula for the LQ method is shown below.

(3) $$LQ_i^s = \frac{\left(E_i^s / E_i \right)}{\left(E_A^S / E_A \right)}$$

where E refers to employment, (i) refers to a given *municipio*, (s) refers to a particular sector or industry, and A refers to the state of Yucatán.

In essence, the location quotient is simply the ratio of two ratios. The numerator expresses the percentage of the workforce employed in a given sector for a particular *municipio*. The denominator displays the same relationship at the state level. If the percentage of the workforce employed in a given sector at the *municipio* level exceeds the state average, the location quotient will be greater than 1. If the LQ is greater than 1, it is assumed that the *municipio* is self-sufficient and that "excess" employment serves demand outside the region. If the LQ is less than 1, it is assumed that the *municipio* is not self-sufficient and that no basic employment exists. The LQ must be carried out and summed over all sectors for each of Yucatán's *municipios* in order to derive estimates of basic and non-basic employment for each location. Subsequently, census data on transfer payments (pensions and other private and government transfers) are converted to full-time equivalent employment and included in the spatial econometric model to ensure that the economic base model does not over-predict multiplier effects.

Following estimation of economic base model components and specification of spatial weights, the next step in modelling the economic base relationship econometrically is calibration of a traditional OLS model. Total employment serves as the dependent variable; basic employment and transfer payment employment are used as independent variables. In addition, variables are log transformed to account for heterogeneity (and likely heteroskedasticity). Furthermore, since the economic base relationship is not linear, the transformed variables allow estimation of individual spatial multipliers for each sub-region. The traditional OLS model is specified as follows:

(4) $$\ln(E_T) = \alpha + \beta_1 \ln(E_B) + \beta_2 \ln(E_{TP}) + \varepsilon$$

where E_T and E_B are defined as above, E_{TP} represents full-time equivalent employment resulting from transfer payments, α is a constant or y-intercept term, β_1 and β_2 are regression coefficients accounting for the economic base relationship, and ε represents the error term.

This initial model will be used not only to estimate the relationship between total economic activity (dependent variable), basic activity and transfer payments (independent variables), but also to carry out diagnostics for spatial effects on variables and residuals. Assuming spatial effects are present, spatial regression techniques are employed to correct the model and obtain unbiased, consistent estimates of model parameters. In addition, incorporation of spatial effects will facilitate identification of spillover effects among *municipios* and account for the varying magnitude of economic base multipliers. Results of diagnostic tests reveal what kind of spatial econometric model best represents the economic base relationship at the *municipio* level in Yucatán. In general, three possible model outcomes exist: no spatial effects, spatial lag effects, or spatial error effects.

In the event of no spatial effects, the simple OLS model above (Equation 8) may be employed to represent to economic base relationship at the local scale in Yucatán. In this instance, no spatial autocorrelation exists among model residuals. As with all econometric models, however, issues of heteroskedasticity and non-normality of residuals must be taken into account.

Spatial lag effects are present in OLS models when a substantive process (spatial interaction, for example) brings about autocorrelation in model residuals. From a theoretical perspective, the spatial economic base model is premised on the existence of spatial lag effects, as economic activity in one *municipio* is expected to generate indirect economic activity in other *municipios*. In this model, inclusion of a spatially lagged (dependent or independent) variable eliminates spatial dependence among the error terms. Failure to include the spatially lagged variable is tantamount to specification bias due to omitted variables; parameter estimates will be biased and inconsistent. The spatial lags model may be specified as follows:

$$(5) \quad \ln(E_T) = \alpha + \beta_1 \ln(E_B) + \beta_2 \ln(E_{TP}) + \rho W_1 \ln(E_T) + \varepsilon$$

where E_T, α, E_B, E_{TP} and ε are defined as above, W_1 represents the spatial weights matrix, β_1 and β_2 represent the direct impacts of basic activity and transfer payments within the *municipio*, respectively, and ρ corresponds to indirect (or spillover) impacts of economic activity in other *municipios*. In the theoretical spatial economic base model, ρ is expected to take a value somewhere between 0 and 1. This model is analogous to a (mixed) autoregressive model in time-series analysis. The initial independent variables $\ln(E_B)$ and $\ln(E_{TP})$ capture the "intra-regional" impacts of basic activity within the region on total regional employment. The lagged dependent variable $[\rho \ln(E_T)]$ captures the "inter-regional" or

spillover impacts of economic activity in other locations on total employment within a given *municipio*.

Spatial error effects are a form of "nuisance dependence" in the residuals that frequently results in geographic data when administrative boundaries do not coincide with the substantive process being modelled. Although OLS estimation in the presence of spatial correlation among model residuals yields unbiased coefficients, estimates of standard errors will be inconsistent. In addition, inferences based on F and t-statistics will be misleading and the coefficient of determination (R^2) will be incorrect. The spatial errors model takes the following form:

$$(6) \quad \ln(ET) = \alpha + \beta_1 \ln(E_B) + \beta_2 \ln(E_{TP}) + \lambda W_2 u + \varepsilon$$

where E_T, α, E_B, E_{TP}, β_1, and β_2 are defined as above, W_2 is a spatial weights matrix, u represents the spatially correlated component of the residuals, λ is an autoregressive error parameter, and ε is a normally distributed, uncorrelated error term.

NOTES

1 TL2 refers to the OECD Regional Database's Territorial Level 2 which is the first or higher sub-national level of analysis for each country (e.g. states, provinces, cantons, prefectures, etc.).

2 Whereas σ-convergence analysis presented in Table 1.1 shows that the dispersion of income has widened, the β-convergence analysis shown in Table 1.2, offers the opposite result with negative and statistically significant coefficients. However, the speed of convergence is still very slow as shown by the unstandarised coefficient for the independent variable (ini95) in Table 1.2.

3 Value-added per worker in rural areas of Yucatán ($5 363 USD) was less than one-third of the national average ($18 464 USD) in 2003, (INEGI, 2004).

4 Conkal and Ucú play a minor role in such a concentration with a combined contribution of less than 1%.

5 Sacalum's concentration is due to the fact that although it is a small community, it benefits from FDI and formal employment. Similarly, Samahil concentrates formal employment in technified poultry farming. It is possible that Quintana Roo municipality a very small community of less than 1 000 people may be commuters and employed elsewhere in formal jobs. Río Lagartos and San Felipe benefit from health access to Imss stemming from formal jobs in fishing and salt production.

6 Although these standards are for countries, they illustrate the fact that in spite concentration is common in the OECD, if we consider Yucatán in the same list, it would outstrip every country in the OECD in terms of concentration of tertiary education.

7 The source for figures on technical degrees can be found in SEP (2007) Sistema Nacional de Información Educativa and those for training at INEGI's Censo General de Población y Vivienda (2000)

8 An increase of 10% in transport costs can reduce trade in 20% (Limao and Venables, 2000)

9 According to INEGI (2006), average value-added per worker in Mexico was $18 464 USD in 2003.

10 Value-added per worker in rural areas of Yucatán averaged $5 363 USD in 2003 (INEGI, 2006).

Chapter 2
What Policies for Regional Competitiveness and Social Cohesion?

Introduction

Analysis of the current policy agenda for improving regional competitiveness and social cohesion in Yucatán must take into account the implications of recent political and economic transformations at both the national and state levels. Since the turn of the 21st century, both Mexico and Yucatán have experienced tremendous political and economic change. On the one hand, new forms of government, in Yucatán –and at the national level- have opened up new opportunities for more inclusive civic and political engagement. In addition, NAFTA and other free market policy reforms in Mexico and abroad have created unprecedented opportunities for some regions, while some others have lagged behind resulting in profoundly reconfigured economic landscapes, and concomitant livelihoods, throughout the country. On the other hand, due to political and economic change, policymakers at both state and national levels have devoted much of their energies in recent years to developing and implementing regulatory and institutional frameworks that were largely missing, poorly enforced, or improperly designed under previous administrations.

The case of Yucatán is revealing. Since assuming control of government in 2001, state government officials from the *Partido Acción Nacional* (PAN) have confronted a region that lags significantly behind most of Mexico in terms of social and economic development. A cursory inspection of regional social and economic indicators reveals only marginal improvement during the past six years. However, this apparent lack of tangible progress in promoting economic development is somewhat misleading. State government officials in Yucatán have carried out a wholesale reform of the policy and institutional frameworks that regulate planning, economic development, public administration, and land use. These institutions, which are expected to improve the state's competitiveness and the quality of life of

its residents, should be considered policymakers' most important contribution to social and economic development in Yucatán.

Among the most significant institutional frameworks is the recently enacted "Law of Economic Development" (LDE in Spanish), which consists of six components: planning, programming, budgeting, evaluation, statistical and geographic information, and social participation and co-ordination. Within the context of this legislation, the State Development Plan (PED in Spanish) is the primary means of carrying out medium and long-term planning in Yucatán. Following state government elections (every six years), the LDE requires the governor to present the PED to the state congress within 180 days of taking office. As part of the PED, the incoming state government is expected to offer an assessment of challenges and opportunities for economic development, a "long-term" (six-year) vision and priorities for the state, a set of concrete objectives for economic development, a series of medium-terms plans linked with the objectives of the PED, and mechanisms for evaluation. In accordance with the Law of Economic Development, municipalities are also required to submit periodic development plans (following the electoral cycle), with the express intent that municipal plans be linked to the state plan (which is, in turn, linked to the National Development Plan).

Policy agenda for improving competitiveness and social cohesion

In order to offer coherent recommendations for improving competitiveness and social cohesion, it is essential to situate Yucatán accurately in terms of economic development and the existing policy agenda. Based on any number of indicators discussed in Chapter 1, Yucatán must be regarded as a lagging region with respect to the rest of Mexico. Furthermore, Yucatán displays the fourth highest incidence of extreme poverty in Mexico and is one of only 12 states with high or very high levels of marginality.

Confronted with concomitant high levels of marginality and low levels of competitiveness, policymakers in Yucatán have made equity the primary focus of economic development initiatives for more than a decade. The 1995-2001 State Development Plan, for example, identified the excessive concentration of economic activity in Mérida as the primary cause of disparities in income, employment and economic opportunity and sought to achieve "balanced sustainable regional development" by channelling export-oriented industrialization to rural areas (*Gobierno del Estado de Yucatán*, 1995). The most recent State Development Plan, for the period 2001-2007, attempts to promote diversification and regional integration in order to distribute the benefits of economic growth more equitably and

reduce persistent social and regional disparities (*Gobierno del Estado de Yucatán*, 2001).

The current state government identifies a host of challenges confronting regional competitiveness in Yucatán. Serious concerns include low levels of human capital, lack of innovation, and inefficient and uncompetitive supply networks. With respect to micro-enterprises and small and medium firms, challenges include difficulties in gaining access to markets, excessive regulation and an overly complex fiscal regimen, poor access to credit, lack of information about markets, the proliferation of the informal economy, and lack of planning and promotion in the tourism sector.

According to the 2001-2007 State Development Plan, the essential goals of economic development policy in Yucatán include providing the infrastructure and technology necessary to promote innovation, attracting investment which generates employment, and creating conditions to make small and medium enterprises (SMEs) more competitive. The plan also specifically contemplates the need to strengthen linkages with local suppliers and develop greater synergies between government, the private sector, and institutions of higher learning (*Gobierno del Estado de Yucatán*, 2001).

Given these policy objectives and the issue of marginality discussed above, several factors are essential for improving regional competitiveness and social cohesion. Key policy areas include infrastructure and logistics; sustainable development; rural development and urban-rural linkages; seizing markets and trade opportunities; creating employment opportunities; improving human capital; and marginality and poverty alleviation.

Infrastructure and logistics

State government officials have pursued an aggressive strategy of improving infrastructure during the past decade, spending more than $350 million USD since 2001. Investment in infrastructure has been spurred primarily at the federal level as part of the *Plan Puebla-Panamá*, which seeks to promote greater economic co-operation and competitiveness within the Mesoamerican region. The basis for the enormous investment in infrastructure is Yucatán's strategic location in the Mesoamerican region and its potential as a trans-shipment location and distribution centre for Central America, the Caribbean and other areas of the Americas (*Gobierno del Estado de Yucatán*, 2001).

Policymakers have also addressed equity by targeting infrastructure investment in *municipios* with high levels of marginality. With respect to highway infrastructure, state government has increased paved roads by 23%

during the past decade. As a consequence, the bulk of rural population benefits from relatively easy access to the state capital and other major cities in the Peninsula. The dense road system in Yucatán leaves the vast majority of population in the Peninsula within three to four hours of Mérida.

Progreso has become the main destination of public investment in transportation allowing the port to become a potential – albeit underutilised- window to the world. The port facility accommodates cruise ships, as well as more than four million tons of cargo annually. Although the volume of cargo entering the port has increased by almost 30% since 2001, exports comprise less than 10 of total shipments. Important commodities include containers for the *maquiladora* industry, petroleum, and grains. The primary destination for exports is Panama City, in the US state of Florida. In general, the location of the port makes the region readily accessible to the main cities along the East coast of Mexico, the south-eastern coast of the US, Central America and the Caribbean.

Although, informal co-operation exists between port officials and the cities of Mérida and Progreso the port's efficiency and potential are constrained by physical bottlenecks. For example, port facilities confront a bottleneck because trucks must pass through downtown Progreso to reach the main highway to Mérida (and elsewhere). In addition, the state lacks a functional rail system (the costs are prohibitive at present), which eliminates the full benefits of intermodal transport. Currently, the port facility does not appear to be operating anywhere near full capacity, particularly in terms of export and general cargo. Producers in Yucatán also confront limited information about the availability and costs of port facilities; port representatives believe incentives are needed to promote a greater port use.

State government and the private sector are currently collaborating to convert the port facilities into a major distribution centre by developing a nearby "logistics platform" that will facilitate movement and processing of seafood, agricultural commodities, and food products. This project, at least conceptually, is quite fascinating, especially the possibility of carrying out higher value-added processing activities at the transshipment location. This "plataforma logística" will be administered by a Spanish firm that oversees similar operations in Zaragoza, Spain. Although other international firms have purportedly shown interest in occupying the logistics platform as a transhipment point for the US market, it is unclear what, if any, direct role local industries will play. However, policymakers do expect strong linkages to develop between the occupants of the logistics platform and local service industries.

The infrastructure improvements described above are part of a statewide logistics strategy designed to expand linkages with the rest of the Yucatán

Peninsula and to promote trade with North America, Central America, and the Caribbean. Initiatives include a distribution centre in eastern Yucatán to supply markets in Cancún, a transportation hub within the Mérida metropolitan region, warehouse and storage facilities for agricultural production in the southern part of the state, and a dry dock just outside Mérida to disperse cargo and rail operations. As mentioned above, state government and the private sector are currently collaborating to convert the port facilities into a major distribution centre by developing a nearby "logistics platform". Another important component of state government's logistics strategy is the proposed relocation of the international airport more than 30 kilometres to the *municipio* of Hunucmá. In addition to other infrastructure improvements, policymakers expect this project to link air transport more seamlessly with other modes of transport and other areas of the state and Peninsula. The airport proposal is also expected to have positive impacts with respect to urban development and poverty reduction.

Box 2.1 **Plataforma Logística de Yucatán (PLAYA)**

Located about halfway along the 30km Mérida-Progreso highway corridor, state government officials have envisioned the "Plataforma Logística" as a key initiative to make Yucatán one of the most important export locations in Latin America. Federal, state and private sources will invest $200 million (US) to construct an 100-hectare transshipment and processing centre about 10km South of port facilities in Progreso. The logistics platform is expected to attract firms, mainly from Asia and Europe, which are looking to export finished products to markets in the United States.

Sustainable development

Yucatán compares favourably with much of Mexico in terms of legislation to promote environmental protection. For example, an explicit policy framework, at both national and state levels, regulates economic activities and urban development and developers are required to submit an environmental impact assessment before initiating projects with potential environmental consequences.

Notwithstanding the existing institutional framework for environmental protection, the region's wealth in terms of cultural heritage and natural resources face diverse threats. Quality of life is one of Yucatán's primary advantages due to abundant coastal and water resources, numerous cultural and tourism destinations, extensive physical infrastructure, attractive year-

round climate, quality service providers, including education and health care, as well as low levels of serious crime. However, several environmental problems, including toxic waste and coastal pollution, noise and air quality threaten the region's quality of life in the medium to long-term.

The current policy agenda in Yucatán generally overlooks environmental sustainability. As a consequence, the metropolitan region is confronting a set of environmental and urban development challenges that stem from four inter-related factors: lack of co-ordination among municipalities, as well as between state and municipal governments; absence of a long-term vision and comprehensive plan for the metropolitan region; lack of civil service (planning independent of politics); and limited participation of civil society in the planning process.

In the case of Mérida, specific environmental challenges include water and sewage systems, land-use planning and zoning, low and moderate-income housing, sprawl, a poorly planned metropolitan (public) transport system. The major opportunity to tackle these issues, at least in certain areas of the metropolitan region, is Metrópolisur, an ambitious strategy to promote more balanced urban development and social cohesion. However, given the dearth of long-term planning mentioned above, full implementation of this plan will confront substantial barriers.

Box 2.2 **Pork production and groundwater contamination in Yucatán**

The state of Yucatán possesses one of the greatest reserves of groundwater in all of Mexico. In the case of Mérida, wells in the southern part of the *municipio* provide approximately two-thirds of water resources, which amount to water consumption of 460 liters per person per day (Marín *et al*., 2000). Unfortunately, the aquifer is prone to contamination due its permeability and several human factors, including lack of a sewage system and the discharge of industrial and agricultural waste directly into the aquifer. In addition, most homes in Mérida rely on septic tanks that quickly filter down into the aquifer, which has contaminated the upper 20 meters of freshwater reserves (Marín *et al*., 2003).

Studies have also found high levels of organic compounds (solvents) and heavy metals in well water. Sources of contamination include agro-industries which use large volumes of pesticides and fertilizers, and the rapidly growing pork and poultry industries (Marín *et al*., 2003). As part of Yucatán's economic development strategy in the 1990s, the number of hogs and corresponding number of large pork production facilities grew rapidly. In 2005, for example, the output of pork producers exceeded 87 000 metric tons. 80% of animals are located in farms in close proximity to Mérida and more than one-third of all waste is discharged directly into the ground, reaching the aquifer without treatment

Box 2.2 **Pork production and groundwater contamination in Yucatán** *(cont.)*

(Drucker, 2003). A possible solution, as suggested by researchers, involves treatment of contaminated waters prior to discharge and use of some sewage as fertilizer for agro-industrial production.

Mitigation of groundwater contamination at the state level is complicated by a regulatory framework in which pork production facilities are required to obtain federal permits based on their discharge levels. However, the federal government does not funnel the resources derived from permit fees to provide funds for mitigation and treatment to state governments. In recent years, state government officials have employed research funds from federal sources (*Consejo Nacional de Ciencia y Tecnología*) to address this issue. Another alternative, preferred by a small, but growing number of institutions in the United States, is the use of duckweed, a ubiquitous and rapidly growing aquatic plant that absorbs organic waste like a sponge. One of the major advantages of duckweed is that it grows rapidly and can be used to supplement feed for the very animals whose waste contributes to its growth. Legislation as in the case of Bretagne in France (see Box 3.3) can also be used. To date, however, no strategy has been implemented to mitigate groundwater contamination resulting from pork production in Yucatán.

Many of the same environmental issues that threaten quality of life in Mérida are also present in rural areas. Any attempt to promote sustainable development in rural areas of Yucatán must also take into account and reconcile cultural practices, for example the annual burning (*quemas*) of brush and forest (*monte*) as part of traditional slash-and-burn (*milpa*) agricultural production. Policymakers and researchers have offered some recommendations to address environmental concerns in rural areas, including a project which converts pig excrement into fertilizer. However, agricultural production schemes are generally imported and applied haphazardly in Yucatán, with little regard for environmental consequences. In addition, environmental education is sorely lacking and *municipios* fail to collaborate in solving problems that cross local boundaries.

Sustainable tourism development, in which local residents retain the majority of economic benefits, is not currently a realistic development strategy for the vast majority of rural communities in Yucatán. The case study of sustainable tourism in the Celestún Biosphere Reserve provides an example of the difficulty in balancing sustainability with cultural practices and the livelihoods of local people (Box 2.3).

Box 2.3 **Sustainable Tourism in Celestún**

The Celestún Biosphere Reserve is located on the western coast of the Yucatan Peninsula. Bordered by the Palmar Reserve to the North and edging slightly into Campeche to the South, the reserve is composed of 81 482 hectares. Salt water enters the estuary and runs parallel to the coast while mixing with fresh water from *cenotes* (sinkholes or underground caverns), providing an environment in which mangroves flourish. The mangroves provide habitat to a wealth of plants and animals, including migratory birds that fly from North America and the popular American or Caribbean flamingo. The estuary is not the only habitat of importance; the reserve covers areas of coastal sand dunes, lagoons, swamps, flooded lowland forest, lowland dry forest, flooded pastures, and hillocks.

Tourism in Celestún began about 20 years ago when a group of fishermen began taking people out in their boats to see the flamingos in the reserve. These men, called *lancheros*, continue to offer access to the estuary. Subsequently, state government built a small tourist centre at the entrance of the reserve. In addition, several restaurants and a few hotels, as well as some craft vendors, cater for visitors. Although tourism is still not the primary livelihood in Celestún, it is becoming increasingly important as more people visit the reserve.

The community of Celestún, with approximately 6 000 inhabitants, depended on the estuary for sustenance long before tourism existed in the community and the government regulated its use. Fishing remains the primary source of income, followed by salt production, in which saltwater is channeled through a series of pools until the water evaporates, and tourism. Several local NGOs have tried to create programmes for alternative jobs, such as beekeeping, aquaculture, and floriculture, but no alternative forms of employment have been established on a large scale.

In the 1970s, the estuary and Biosphere Reserve were established as national protected areas which ensures, at the very least, some environmental protection. Laws exist to prevent damage to the reserve and the species within it, including restrictions against hunting, fishing, and the cutting of mangroves. It is the responsibility of federal agencies to regulate activity within the reserve, but it is difficult given their limited staff and budget.

Though NGOs collaborate on conservation of the reserve, their missions differ and can conflict. There is a serious lack of communication and co-operation among the NGOs, which restricts conservation efforts. Additionally, NGOs appear to locals as solely motivated by self-interest, inhibiting support of conservation efforts among the community. There are also problems with the laws aimed at the reserve's preservation. When the estuary was declared a biosphere reserve, the area was already being used for hunting, fishing, and fuel wood. No alternative way of life has been offered, which forces many inhabitants of Celestún to break the laws to subsist. Poaching and fishing in the estuary, two illegal activities residents engage in to survive, disrupt the balance of the mangrove ecosystem. Shrimp fishing and mangrove cutting also cause considerable damage.

Source : Lindsay and Vogler (2004)

Rural development and urban-rural linkages

The relationship between Mérida and rural areas of Yucatán is highly asymmetric (see case study on spatial multipliers in Chapter 1). Although state economic development policy has generated considerable employment in some communities during the past decade, it has been unsuccessful in promoting self-sustaining economic development in rural areas. Since the demise of the henequen industry in the 1970s, Mérida has become the primary destination for migrants from rural communities. In addition, the city dominates a functional area with a radius of (at least) 30-40 kilometers, which has led to disinvestment in nearby rural communities. Beyond permanent migration, this asymmetrical relationship is further exemplified by the periodic movement (i.e. daily, weekly) of tens of thousands of rural inhabitants to Mérida for the purposes of employment, education and commerce.

Out-migration remains a concern in many rural areas. According to data from CONAPO (2005), Yucatán exhibited slight net out-migration between 1990 and 2005, with a net loss of fewer than 4 000 inhabitants. These aggregate figures obscure a much more sober reality, however. The vast majority of the more than 160 000 in-migrants during this time settled in Mérida; the vast majority of the 170 000 out-migrants abandoned rural communities (the bulk of it for employment in Cancún and the neighbouring state of Quintana Roo). The impacts of international migration, primarily to the United States, are also a major concern in many rural communities throughout Yucatán; since 1990 more than 34 000 Yucatecans have migrated internationally. As shown in Chapter 1, the growing importance of international migration in Yucatán is confirmed by remittances, which have increased at an annual rate of more than 50% since 2003.

Box 2.4 **Green Gold: Yucatan's Henequen Economy**

Until the 1980s, Yucatán's economy was focused on the production of a single agricultural commodity – henequen. Henequen is a natural fibre, indigenous to the region, used primarily to make rope and twine. Production of henequen expanded rapidly between 1880 and World War I due to the introduction of the McCormick reaper and the rapid expansion of grain production in the United States. With the financial backing of International Harvester, entrepreneurs in Yucatán developed an efficient system and necessary machinery for processing henequen fibre on a large scale and the region became the sole reliable source of henequen to supply demand. After 1880, the United States imported 90% of the state's henequen production and more than 85% of U.S. binder twine was manufactured with fibre from Yucatán (Topik and Wells, 1998; Brannon and Baklanoff, 1987; Wells, 1985).

Box 2.4 **Green Gold: Yucatan's Henequen Economy** *(cont.)*

By the turn of the 20th century, henequen production and processing occupied the dominant role in Yucatán's economy. During the 60-year "henequen boom", the crop comprised more than 95% of the region's exports and more than 70% of agricultural land was devoted to its production (Brannon and Baklanoff, 1987). Between 1870 and 1920, henequen comprised almost 20% of Mexico's total exports (Castilla, 1991). By the eve of the Mexican Revolution,

Yucatán was exporting more than 100 000 tons of henequen fibre annually, making it Mexico's second most important export commodity following precious metals (Wells, 1985). At this time, Yucatán had the largest share of its workforce employed in manufacturing in all of Mexico. In contrast with most other plantation economies in Latin America, local entrepreneurs maintained control over land, physical capital, and transportation infrastructure that were essential to henequen production (Brannon and Baklanoff, 1987). The state also had an indigenous industry of machine shops and foundries that built steam engines and machinery necessary to remove fibre from henequen plants. In the 1920s, a local cordage industry was established to manufacture twine, cables, and rope for domestic and U. S. markets (Brannon and Baklanoff, 1987).

The henequen boom transformed Yucatán from one of the poorest regions in Mexico to the wealthiest and most industrialised state in the entire country by the turn of the 20th century (Wells, 1985; Topik and Wells, 1998). However, Yucatán's rapid economic growth was a textbook case of dependent development – the region's economic future was completely reliant on foreign investment and tied directly to a single foreign market (Evans, 1979; Wells, 1985). Furthermore, the henequen boom created social unrest as a local oligarchy (a group of 30 families known as *la casta divina*) emerged to control as much as 90% of total fibre production (Wells, 1985; Brannon and Baklanoff, 1987). Similar disparities in the distribution of land and income existed throughout much of the country, giving rise to the Mexican Revolution in 1910. As a consequence of the Revolution, more than 70% of henequen haciendas were expropriated and distributed to peasants in 1934. Cordage factories were eventually nationalised in 1964.

Although the failure of Yucatán's henequen industry is frequently blamed on the Mexican Revolution and break up of large estates, the ultimate explanation of its demise lies in its inability to generate sufficient linkages with the local economy. Yucatan's rail system provides a prime example – although almost 900 kilometres of rails moved henequen from the countryside to the port of Progreso and markets in the United States, secondary cities were not linked and Yucatán was not connected to the national railroad system until 1957. Furthermore, as Brannon and Baklanoff (1987) state, failure of Yucatán's henequen industry also resulted from its "operating outside the discipline of the market system and without the benefit of serious efforts to co-ordinate production and planning."

Although the importance of henequen to Yucatán's economy peaked in the first 25 years of the 20th century, the crop remained the region's primary

Box 2.4 **Green Gold: Yucatan's Henequen Economy** *(cont.)*

economic activity until the 1970s. In 1970, more than 55% of the economically active population in the state remained employed in agriculture. At this time, henequen still represented more than 50% of farmed land and 60% of total agricultural production (Castilla Ramos, 1991; Baños, 1996). However, the introduction of synthetic fibres and emergence of new competitors in South America (Brazil), Africa (Kenya and Tanzania) and Asia (Philippines) brought about a dramatic decline in the region's henequen industry. By 1990, only one-quarter of the population was employed in agriculture and henequen represented less than 10% of total production (Baños, 1996). The most obvious result of the demise of the henequen industry has been its impact on unemployment levels in rural areas of Yucatán, where out-migration has exploded during the past two decades.

Source : Biles (2001)

Yet international remittances have not been used to create employment and greater opportunities through business development, but rather to improve housing and supplement family incomes. According the state government officials, a two-fold strategy is needed to deal with migration. In communities where extensive migration exists, policies should focus on using the financial and human capital of migrants to improve quality of life. In rural areas where migration has yet to proliferate, strategies are needed to promote greater employment and economic opportunities.

Due to weak tax collection and unstable economies, many rural municipalities lack the revenue and sufficient financial resources to remain economically and politically viable. Furthermore, the vast majority of rural *municipios* are unable to provide basic services such as water and waste collection and disposal adequately. One proposal voiced by state policymakers is a reduction from 106 *municipios* to approximately 15, so as to coincide with electoral districts. Although this proposal would reduce the costs of government and make the delivery of services more efficient, it is highly unlikely due to political inertia and the distinct regional identities among the inhabitants of Yucatán. Unfortunately, formal collaboration among groups of *municipios* is also unlikely due to historical rivalries and political differences.

Seizing markets and trade opportunities

As part of the 2001-2007 State Development Plan, policymakers in Yucatán have implemented an economic development strategy premised on

attracting greater foreign investment, diversifying the state's economy, and promoting greater participation in the global economy. Specifically, government officials have sought to increase the participation of local firms in export markets, thereby increasing employment and value-added in exports. A second objective is to strengthen export-oriented production chains, increase promotion and export products with greater value-added. Policymakers have proposed several initiatives in order to promote and expand trade, including simplifying procedures, developing information technologies and statistical information on trade opportunities, taking advantage of the strategic location, and improving infrastructure for exports. The government's strategy focuses on three main areas: manufacturing, especially export-oriented assembly, furniture production and information technology; agriculture and food processing for export markets; and tourism.

Despite FDI is a key objective of the State Development Plan, they have been extremely weak in recent years. As a result, Yucatán ranks 28th nationally, accounting for significantly less than one percent of total FDI in Mexico (Table 1.9). Initial attempts to attract FDI to Yucatán date back to the 1980s, as state and federal governments began to come to terms with the demise of the henequen industry. In 1984, the federal government implemented the Henequen Zone Restructuring Programme to diversify the regional economy and promote economic development by focusing on three key industries – tourism, fishing and export-oriented assembly (*maquiladoras*). This policy, and the eventual privatization of the state-owned fibre processing plant in 1990, provided the initial impetus for an export-oriented industrialization strategy premised on FDI.

The 1995-2001 State Development Plan played an even more important role in attracting FDI and promoting export-oriented industrialization. As mentioned above, this policy attempted to redress disparities and achieve "balanced sustainable regional development" by channelling *maquiladora* production to rural areas of the state in order to generate employment and improve living conditions. This policy identified the excessive concentration of economic activity in Mérida as the primary cause of disparities in income, employment and economic opportunity in Yucatán. In addition, the plan sought to reduce the high levels of marginality found in rural areas of the state (*Gobierno del Estado de Yucatán*, 1995).

FDI in export-oriented manufacturing was relatively strong throughout the 1990s, particularly in rural areas of Yucatán (Table 1.9). By 2001, more than 130 *maquiladoras* were in operation, employing more than 35 000 persons throughout the state. The vast majority of these export-oriented firms produced clothing and apparel for markets in the United States and, by 2001, Yucatán accounted for almost ten percent of total national employment in clothing and apparel *maquiladoras*. At this time,

maquiladoras accounted for one-third of total manufacturing employment and more than two-thirds of total exports in Yucatán (*Secretaría de Desarrollo Industrial*, 2000).

During the past five years, however, more than 40% of these export-oriented assembly plants have either closed or left the state and Yucatán has lost more than one quarter of its *maquiladora* employment in spite of a brief recovery in 2004. Currently, 77 *maquiladoras* employ more than 26 000 people throughout the state (Figure 1.46). Approximately 60% of export-oriented employment remains in rural areas of Yucatán; key locations include Motúl, Valladolid and Tizimín. Although the sudden demise of the export-oriented strategy in Yucatán coincided with a severe economic downturn in the United States, competition from emerging countries such as China might have played a role in bringing about the rapid decline in export-oriented production.

The most recent State Development Plan, however, represents a clear and explicit departure from the industrial development priorities of previous administrations. As stated above, the previous strategy, from 1995-2001, focused on channelling export-oriented manufacturing firms to rural areas of the state. The reason for this policy was to create job opportunities in areas with high levels of unemployment and to dampen out-migration from rural communities to Mérida. Within the 2001-2007 State Development Plan, however, policymakers have focused simply on promoting "industrial development" with no distinction between maquiladoras and non-maquiladoras and no specific consideration for territorial or geographic disparities. As a result, the current policy agenda, which promotes cluster development in furniture and information technology, is likely to generate relatively few benefits in rural areas of the state and (if successful) could exacerbate disparities between Mérida and rural communities.

Since 2001, the bulk of FDI has been concentrated in a handful of agro-industrial projects that depend primarily on low-cost labour and other concessions and incentives from the state government, the financial services sector, which has come under the control of foreign banks since the late 1990s, and other services (likely related to tourism). What little FDI exists in Yucatán is generally focused on short-term returns, including fiscal incentives, low labour costs, and access to markets in the US.

Although FDI has limited benefits in Mexico as linkages with local firms are rare and in many cases they are exempted from local taxation, there are still benefits through the labour market. Local demand for workers attracts further people which enhances agglomeration and develops through experience and training the skills and qualifications of the workforce. Moreover, in many cases people in the labour force not only learn a craft

and develop certain level of productivity and qualification through the use of technology, but also develop a work code and ethic that enables them to further their careers. One such case in Yucatán is that of the *maquiladora* Ormex (Box 2.5).

Box 2.5 **Introducing Technology and Upgrading Human Capital in Labour-Intensive Activities**

Founded in 1982, Ormex is an export-oriented production facility (*maquiladora*) located in Merida's *Ciudad Industrial*. A subsidiary of Sybron Dental Specialties, based in the United States, the firm employs more than 800 workers. Unlike the vast majority of maquiladoras in Yucatán, which employ semi-skilled labour to produce clothing and apparel for markets in the United States, Ormex uses a combination of semi-skilled and skilled labour, as well as robotics and computerised technology, to produce dental equipment and supplies for markets in the United States, Europe and Asia. In addition, the firm makes use of a novel model of employee incentives, in which decisions are made in participatory fashion and workers are expected to learn new tasks and occupy positions with greater levels of responsibility (and related salary increases).

Ormex was the first firm in Yucatán to obtain ISO9000 certification and became the first local firm to receive Mexico's *Premio Nacional de Exportación* in November 2004, which is awarded to manufacturers that demonstrate high levels of quality, a significant presence in international markets, and contributions to the diversification of the Mexican economy (Castilla Ramos, 2006).

In response to the rapid demise of the *maquiladora* sector, policymakers in Yucatán have recently established cluster initiatives in two industries – furniture production and information technology. A cluster may be defined as a spatial concentration of firms that interact with each other on the basis of similarities (as an industry) or complementarities (in the form of intra- or inter-industry linkages). In order to contribute to regional economic development, a successful cluster strategy should build on existing networks among firms, increase the efficiency of services and information for the cluster (rather than individual firms), and promote engagement of firms in new relationships to promote innovation (OECD, 2004). Policies for developing cluster initiatives may also serve as a process for promoting collaboration among actors within the regional economy (OECD, 2006a).

In general, the success of a cluster strategy depends on having the appropriate human capital, technology and infrastructure in place to generate investment and innovation. Linkages with universities and research institutes also can play an important role in expanding innovation and

linking producers of knowledge with users. Other key elements for developing clusters are the availability of financing, entrepreneurship, and use of FDI in promoting innovation (OECD, 2006a)

State government officials in Yucatán have provided the necessary physical infrastructure to support the development of successful clusters. In the case of furniture production, the *Parque Mueblero* industrial park was established in 2003 and now houses several domestic and international manufacturers. Although the wood products sector has grown in recent years and currently employs more than 2 500 workers throughout Yucatán, the success of the furniture cluster is uncertain (Box 2.6). Cluster initiatives ideally should be undertaken within sectors that possess a comparative advantage and which are closely linked to other firms and sectors within the regional economy. To date, the furniture cluster initiative has failed to generate significant horizontal and vertical linkages with local firms. However, the furniture sector is generally characterised by low levels of productivity, as well as nebulous linkages with other sectors of the local economy, and uncertain prospects for promoting innovation.

Box 2.6 **IT Cluster Development in Yucatán**

In 2002, state government partnered with higher education institutions and private sector representatives to establish the *Consejo de la Industria de la Tecnología de la Información de Yucatán, A.C.* (CITI), which sought to promote the expansion of information technology firms. *CitiCentro* was established in 2004 to provide space for IT firms and programmers. This IT development initiative purportedly will take advantage of the human capital produced by 24 universities and technical institutes throughout the state (total enrollment of more than 6 000 students in 2004). Currently, 34 firms in Yucatán carry out software development activities and employment in IT has grown from approximately 60 workers in 2003 to more than 400 by 2007.

The information technology cluster revolves around the *Centro de la Industria de Tecnologías de la Información* (*CitiCentro*), a software development initiative supported by state government. Although this project is one of the few initiatives that display productive co-operation among government, the private sector and universities, the centre has been unable to operate at full capacity due to a lack of qualified personnel, raising serious doubts about Yucatán's comparative advantage in the information technology sector. Notwithstanding this bottleneck and the other shortcomings of *CitiCentro*, the project could be viable in the long-term if

state government, the private sector and universities co-operate further to develop the region's human capital.

In order to promote successful development of the software cluster and attract additional investment, the primary requirement is that the labour supply meets the demands of employers. In some countries, as the experience of the information technology sector in Costa Rica suggests (Box 2.7), integrated technical and educational programmes have been established at different levels to meet the needs of specific firms and industries.

Box 2.7 **Information technology in Costa Rica**

In 1997, the US information technology firm Intel invested more than $300 million USD to establish a micro-processor production facility in Costa Rica, creating more than 3000 jobs. Among other factors, Intel's decision to locate in Costa Rica was based on the relatively high educational level of the labour force and an existing comparative advantage in software and information technology (Larrain *et al*., 2000).

The dynamic growth of software and information technology in Costa Rica is the result of successful linkages between the country's public universities and local industries. The Costa Rican government has built quality information technology programmes at both the *Universidad de Costa Rica* and the *Instituto Tecnológico de Costa Rica* during the past 30 years by promoting competition between the two institutions and by facilitating graduate training of faculty in the United States. Graduates and faculty of these two institutions have launched many if the recent start-up companies in software development. The private sector has also responded to the need for quality human resources by creating a technical school focused on software development.

Policymakers have also sought to diversify the state's economy by promoting agricultural and livestock production, which represents a key comparative advantage for rural areas of Yucatán. This agricultural development strategy potentially serves as an important complement to the production of processed foods, which is an important industry in both the metropolitan region and rural areas. As part of the most recent State Development Plan, government officials have focused on improving supply-chain linkages, competitiveness and access to international markets, which has benefited agro-industrial producers disproportionately. Policymakers have also provided substantial financing to certain industries (pork and cattle, for example) and strived to maintain the state's certification as free

from common diseases and pests, which facilitates exports to the United States and other markets.

Box 2.8 **Introducing innovating in papaya production**

Papaya is a large perennial herbaceous plant, native to the Americas, which reaches a height of two to ten meters. In Mexico, maradol papaya (carica papaya L.) is the variety most frequently grown due to the texture of the fruit and its rich flavour. According to the Food and Agriculture Organization, Mexico is the second largest producer of papaya in the world (after Brazil), with a total output of more than 763 thousand tons in 2004. Mexico exports almost 13% of its output, making it the world's leading source of papaya (FAO, 2007).

In Mexico, generally, papaya is cultivated as a horticultural product primarily by small-scale producers (*papayeros*). In Yucatán, more than 600 *papayeros* cultivate about 1000 total hectares. Production takes place in 20 *unicipios*, with more than 60% of total output concentrated around Tizimín and the north-eastern part of the state. With a harvest of almost 70 thousand tons in 2005, Yucatán is among the four most important papaya production locations in Mexico (SAGARPA, 2005). Due to the high quality of its fruit, a significant share of papaya production in Yucatán (more than 25%) is exported internationally.

Rancho San Pedro in Tizimín represents a rare example of successful co-operation among the private sector, research institutions and state government. With funding from the *Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias* (INIFAP), state government and other sources, the enterprise has collaborated with the *Centro de Investigación Científica de Yucatán* (CICY) in the development and application of a "technological package," including cloned seed, in order to increase papaya yields to 180-200 kilos per plant. In addition, the firm provides employment to 170 local inhabitants, shares knowledge with its workers, offers limited profit sharing, and involves staff in decision-making.

Small-scale producers throughout Yucatán face significant limitations, including access to information, technology and financing, in identifying and taking advantage of market opportunities. During the past three years, policymakers have implemented the *Sistema Producto* initiative, a national programme designed to strengthen supply-chain linkages and improve access to market opportunities for small-scale producers of 10 key agricultural and livestock commodities. As part of this project, the *Secretaría de Desarrollo Rural y Pesca* in Yucatán has convened workshops and public meetings between small-scale growers, intermediaries, food

producers and other key participants in regional food production systems in order to improve integration and competitiveness of supply networks.

Although the *Sistema Producto* programme explicitly seeks to improve the livelihoods of small-scale agricultural producers by expanding access to retail supply chains and export markets. Policymakers in Yucatán have concentrated on strengthening a small number of key intermediaries as a means of improving market integration, rather than offering small-scale producers the training and resources necessary to penetrate supply chains and export markets directly. As a result, large intermediaries have strengthened their positions in the supply chain. As these intermediaries deal directly with other brokers and final buyers, they are in a better position to negotiate and perhaps impose standard practices and fixed prices to small-scale producers. Furthermore, industrialisation of agricultural produce can lead to greater demands that can only be satisfied by larger producers leaving small-scale producers out of the supply chain. Indeed, the design of the policy might bring about the opposite effect than first intended as it seems to be happening in the production of chile habanero.

Table 2.1 Priority Activities in Yucatán according to Sistema Producto

Activity
Chile habanero
Papaya
Aloe vera
Henequen
Citrus
Ornamental plants
Beekeeping
Goat raising
Octopus
Tilapia

Given Yucatán's diverse array of archeological sites, extensive coastline and beaches, biosphere reserves and other natural sites, colonial cities, and arts and culture, policymakers have turned to tourism as a vehicle for promoting economic and social development, diversifying the economy and generating employment. In Yucatán, as in many regions of Mesoamerica,

the primary barriers to tourism include poor infrastructure, weak promotion, lack of regional co-ordination and co-operation, and inadequate protection of natural resources.

Box 2.9 **Market access for beef producers in Yucatán**

The unprecedented global expansion of multinational supermarket chains during the past decade has exerted tremendous competitive pressures on domestic and international food retailers alike, forcing firms to cut costs, ensure consistent volume and quality, and provide a greater diversity of products. Consequently, supermarket chains have transformed their operations by improving logistics, increasing the scale and volume of production, and working more closely with suppliers that have the capacity to provide large volumes of high quality produce on a regular basis (Schwentesius and Gómez, 2002). In many instances, the transformation of supply networks has had profound impacts on the livelihoods of small-scale producers.

In the case of Mexico, food retailers have adopted more diversified procurement systems during the past decade, including establishment of their own distribution centres and direct procurement from small-scale growers and use of quasi-formal contracts and imposition of private standards and certification measures to ensure sufficient quality and volume (Reardon and Berdegué, 2002; Schwentesius and Gómez, 2002).

The challenges facing cattle ranchers in Yucatán typify the implications of private standards and certification requirements for many small-scale producers throughout the region. Since the inception of NAFTA, the volume of imported beef from Canada and the United States has skyrocketed. In addition, major supermarket chains throughout Mexico increasingly seek to comply with national certification standards known as TIF (*Tipo Inspección Federal*), which

regulate the slaughter and processing of meat products. To some extent, the smallest producers are able to avoid foreign competition and quality-control regulations by supplying low-quality beef to municipal markets and *carnicerías* that serve poor and working-class populations (although the continued growth of supermarkets can be expected to reduce this niche market). Among the largest cattle ranchers in Yucatán, the challenges are even more daunting. Large-scale producers lack the scale economies and government subsidies necessary to compete with imported beef, as well as the infrastructure and technology required to comply with quality-control standards. As a consequence, virtually 100% of beef sold by large supermarket chains in Yucatán comes from other national and international suppliers.

Source : Biles *et al*. (2007)

During 2005, the state received more than 1.4 million tourists and visitors. More than three-quarters of these visitors came from other regions of Mexico, representing more than 60% of total tourism expenditures in Yucatán. Although state government officials estimate that the tourism sector accounts for 20% of gross state product and 35 000 total jobs (16 000 direct and 19 000 indirect), direct expenditures in core areas (lodging, cruise ship revenues, conventions) amounted to less than $100 million USD in 2005, representing about one percent of total economic activity in Yucatán.

State government officials conceive of tourism as one of its cornerstones for economic development in that the sector is closely linked with numerous supporting industries and services, including transportation, commerce, communications, logistics, health, education. In addition, from a geographic perspective, tourism also offers the possibility of promoting economic development at local and regional scales by promoting different types of tourism (eco-tourism, cruise ships, mass tourism, cultural tourism, etc.) and targeting different markets. At the national level, tourism is the third most important source of foreign exchange, representing 10% of GDP.

The vast majority of financing and support for tourism in Yucatán has come from state and federal sources. However, the private sector and international investors have largely been absent from tourism developments throughout the state. According to Mexico's Ministry of Tourism, Yucatán received only $61 million USD in private investment in tourism between 2001 and 2006. As a consequence, Yucatán lags substantially behind other states in southern Mexico including Campeche and Tabasco.

Although tourism policy in Yucatán has focused on greater planning and promotion, development of infrastructure, and expanding the supply and diversity of tourist destinations while recognizing the importance of sustainability, the tourism industry in the Yucatán Peninsula, focused primarily on Cancún and colonial cities (Mérida), has generally failed to generate many benefits for rural areas. More than 60% of tourism infrastructure spending, employment, production, consumption and investment are concentrated in the *municipios* of Mérida and Progreso. Paradoxically, rural areas of the Peninsula offer a diverse array of tourist attractions. For example, the economic impacts of the hundreds of thousands of annual visitors to Yucatán's archaeological sites are basically limited to admissions (tickets) and souvenirs sold by non-local informal vendors. Rural locations capture very few economic benefits and their populations essentially serve as sources of cheap labour for Cancún.

Currently, rural areas of the state generally lack sufficient infrastructure and human capital to be viable tourist destinations. Nonetheless, state government has recently initiated community development projects and

training in a variety of tourism-related activities in several rural *municipios*. As a result, since 2001 the flow of tourists to rural areas has increased by more than 80% (486 000 visitors in 2005). Policymakers must ultimately balance mass tourism with heritage and eco-tourism and take advantage of proximity to Cancún, while creating opportunities for rural areas, where a large share of tourism attractions are located.

State government currently has an extensive marketing strategy in the US, Canada and Europe, which has resulted in double-digit increases in hotel occupancy during the past three years. However, this strategy promoting mass tourism likely benefits Mérida disproportionately. Furthermore, Yucatán continues to lag behind much of Mexico in terms of its ability to attract international tourists and the related revenue. In 2005, less than 30% of all tourists came from abroad (SECTUR, 2007). Since the states of the Yucatán Peninsula have a shared culture and identity, policymakers understand that they would benefit from a marketing campaign that sells region as a whole, in essence "branding" the peninsula. Although such a strategy would allow Yucatán to attract some of the more than 4.8 million annual international visitors to Cancún and the Mayan Riviera (SECTUR, 2007), formal collaboration is lacking among the three states.

Given Mérida's strengths in tourism and health care and its strategic location, one potentially viable strategy is medical tourism. Mérida is already the primary medical services centre for much of south-eastern Mexico; it is estimated that 20 to 30% of all patients come from outside the state. The health care sector is actively attempting to improve infrastructure by increasing the number of hospitals in rural areas (and, consequently, the number of beds per 1 000 inhabitants). The medical sector also has an active publicity campaign in certain cities of the Peninsula and southern Mexico. Medical care is one of the few sectors in Yucatán that displays effective collaboration between government, the public sector and universities. Unfortunately, co-operation largely appears to be informal, based on social capital.

Although significant demand may exist in cardiovascular care and orthodontics, no strategy is currently in place to attract "medical tourists" from North America or Central America. The region lacks an air connection with Central America, making the small economy of Belize (250 000 inhabitants) the only potential market for health-care services at this time. Although Mérida boasts an ample pool of well-trained physicians and specialists and several first-rate hospitals, patients from the US or Canada, may not find health-care infrastructure up to their expectations.

Creating employment opportunities

According to the most recent State Development Plan, government officials seek to create more and better paid employment and to attract industries that generate greater value-added. Although concrete policies, beyond the cluster initiatives discussed above, are lacking, policymakers identify the need to provide technical training, integrate technology, and promote closer links between education and research with the private sector. With respect to commercial development, policymakers have identified the need to support small, medium and micro-enterprises and to incorporate the informal sector into the formal economy. To promote these objectives, government officials have focused on carrying out legislative reforms and improving access to credit. One particularly interesting proposal, yet unrealised, is a partnership between Yucatán's Secretariat of Industrial and Commercial Development as a "loan guarantor" with the private banking sector in order provide SMEs with greater access to financial resources.

Historically, Yucatán's formal economy has been unable to create sufficient employment opportunities to keep pace with population growth. Notwithstanding the goals of the most recent State Development Plan and the efforts of state government, the private sector continues to fail in meeting the growing demand for jobs. According to the *Encuesta Nacional de Ocupación y Empleo*, Yucatán's economically active population increased by more than 80 000 people between 2000 and 2006. However, registration of workers in government-sponsored health and pension benefits (*Seguro Social*) increased by less than 45 000 workers. Consequently, in absolute terms approximately one-third of those entering the labour force during this five-year period were unable to obtain employment in the formal economy.

Although official unemployment rates among the economically active population in Mérida are generally low, the highest rates (averaging almost 3.7% since 2001) are found among men and women less than 30 years of age, who represent 74% of the unemployed population. The situation is further complicated by the fact that workers with greater than high-school (*preparatoria*) education comprise nearly 50% of the unemployed. While this statistic likely indicates greater levels of participation in the formal economy among the younger and better educated, it also represents an important social issue in a region in which 30% of the population is less than 25 years of age.

Although business representatives and local entrepreneurs claim that stagnation in employment growth is due to lack of preparation at the university level, lack of sufficient economic opportunities for high school and college graduates is also likely a contributing factor. Employment

growth has been insufficient; especially higher income jobs (see Figure 1.24). Although the situation has improved somewhat in the past six years, almost two-thirds of jobs in the formal economy have very low wages and 37% of the population earns less than $4 USD daily (fourth highest in the country). In addition, micro-enterprises account for nearly one-half of employment in Yucatán, a large segment of the economically active population is underemployed (14%), working 15 hours or less per week, and more than 60% of workers lack employment benefits such as social security.

State government officials recognise the need to promote closer links between education and research and the private sector, but such linkages are clearly lacking in Yucatán. From the perspective of government policymakers, the primary vehicle for promoting such linkages has been the "Mixed Funds" grant programme from the National Council for Science and Technology (CONACYT). In recent years, policymakers have used these resources to finance feasibility studies for specific industries (food processing, agro-industrial production, jewellery fabrication, wood products, and information technologies) and to develop proposals for private-public partnerships. The private sector and universities, however, have largely played a passive role in fostering co-operation. In fact, private sector financing of independent research and support for NGOs is almost completely absent in the vase of Yucatán.

Creating jobs has been particularly difficult in rural areas of Yucatán, where small-scale and subsistence agriculture employs more than 100 000 people. Underemployment in rural areas, in turn, contributes to permanent and periodic migration to Mérida and dependence on the urban informal sector as the primary source of employment. Informality in turn, has a serious impact on quality of life. In general, workers in the informal sector earn less and lack job security and access to benefits, such as government-sponsored health care and housing (INFONAVIT) programmes.

The causes of informality are multiple including low levels of education, inflexible labour laws and red tape. Low schooling levels are particularly acute in rural areas limiting workers ability to find employment in the formal sector. Labour regulations and lack of flexibility in the labour market provide a major incentive for employers to hire workers "off the books". In addition, excessive red tape makes it extremely difficult for small and micro-enterprises, initially established informally, to enter and remain in the formal sector. State government has responded to this issue by initiating training and counselling in small business development and setting up the *Centro de Apertura Rápida de Empresas* (CARE), a centre to facilitate the rapid establishment of small and micro-enterprises.

Given the complexity of informality, government officials must address this issue from a variety of perspectives. Rather than attempting to "formalise the informal sector", which is unlikely to succeed, policymakers in Yucatán should focus on creating better employment opportunities, particularly in rural areas. Since the informal sector is associated with lower levels of education, new strategies are required to increase human capital, especially in technical and applied areas of learning. Furthermore, a need exists for more flexible forms of employment (part-time and flexible work hours, for example) to accommodate students and working mothers, as well as a myriad of related social support programmes (i.e. access to credit, capacity-building programmes).

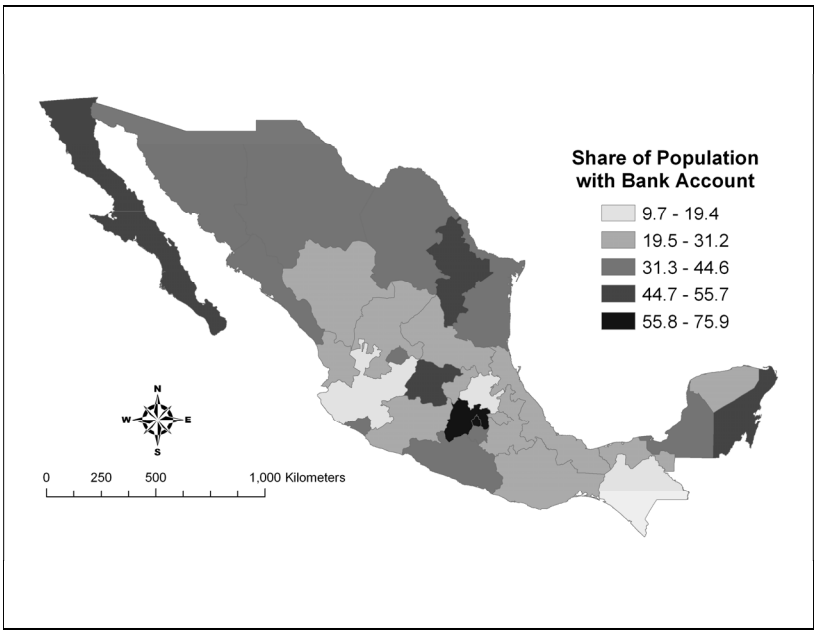
Ultimately, the persistence and proliferation of informality is due, in large part, to the lack of full-time, high paying job opportunities with benefits in the formal sector. A number of challenges impede local investment and concomitant job creation, including: inflexible labour laws and government regulation; lack of co-operation between entrepreneurs and government; insufficient incentives for investment; and a lack of qualified graduates from local universities.

Another major impediment to job creation, particularly for small and medium-enterprises (SMEs), is lack of financing. Yucatán remains among the most marginalised states in Mexico in terms of access to banking services and credit (Figures 2.1 and 2.2). Only 25% of inhabitants have bank accounts, well below the national average (36%). In addition, access to credit is highly skewed, as the state accounts for more than 1.1% of total bank deposits but only 0.5% of loans. In Yucatán, the alternative to banking has been the development of social organisations dedicated to savings and lending (Box 2.10) or ultimately informal financing (Figure 1.25).

Box 2.10 **Social Structures for Popular Lending: *Sistema Coopera***

Sistema Coopera is a member-owned savings and loan co-operative (*caja popular*), whose basic premise is to promote savings and provide occasional financing. In general, members are required to make regular deposits, according to their household budgets. *Cajas* differ from banks in that the total amount of their lending activities generally does not exceed their deposits. As access to bank credit has waned, *cajas* have proliferated – more than 1.7 million Mexicans were *caja* members in 2002 (COMACREP 2002). In the Yucatán Peninsula, Sistema Coopera, with more than 160 offices serving 125 000 members, is the largest *caja popular*.

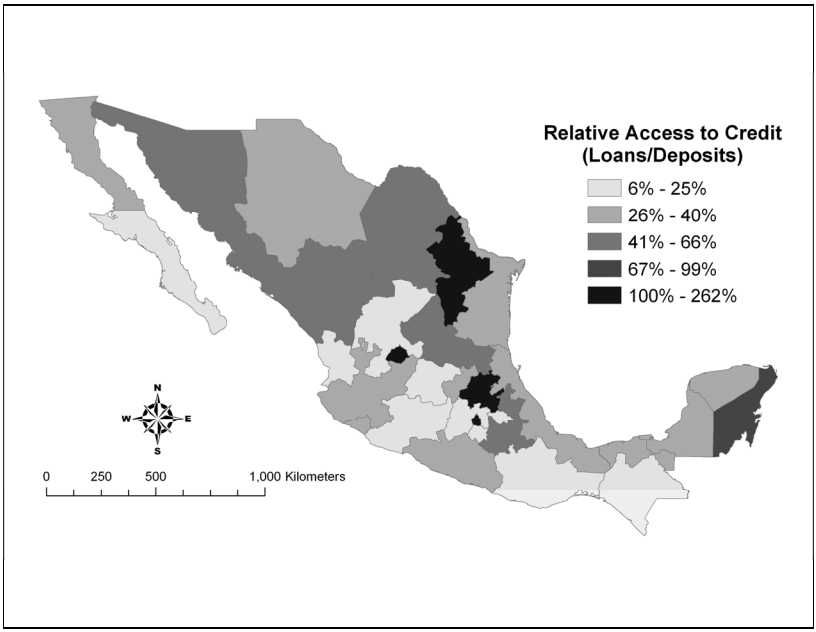
Figure 2.1 **Share of Population with Bank Accounts**



Source: Comisión Nacional Bancaria y de Valores (2006) Boletín Estadístico Banca Múltiple

Figure 2.2 **Relative Access to Credit by State**

Loans relative to deposits



Source: Comisión Nacional Bancaria y de Valores (2006) Boletín Estadístico Banca Múltiple

Box 2.11 **Financial exclusion and the role of the informal economy in providing access to credit**

Starting in the mid-1990s, two policy reforms opened Mexico's financial system to greater foreign intervention. The North American Free Trade Agreement (NAFTA) gradually eased restrictions on foreign bank participation, initially limiting firms to non-lending banking activities. In addition, the Mexican government further relaxed limitations on foreign intervention following the financial crisis of 1994-95 in an attempt to raise capital. By 1999, all restrictions on foreign intervention had been eliminated. Currently, foreign financial institutions control six of Mexico's eight largest banks, representing about 75% of all deposits and outstanding loans.

Box 2.11 **Financial exclusion and the role of the informal economy in providing access to credit** ***(cont.)***

The transformation of Mexico's financial system focused on creating a more efficient, competitive, decentralised and inclusive banking system. Foreign banks would purportedly diversify sources of capital and credit, increase the amount of funding available, improve quality, costs and availability of financial services, modernise financial system infrastructure, and increase transparency of the banking sector.

Although liberalization of Mexico's financial system has achieved some of these objectives, foreign banks concentrate on serving large corporate clients and providing consumer credit and currencies to domestic banks, rather than financing activities that expand local production capacities and employment. As a consequence, the financial sector risks becoming "detached" from the local economy. Substantial evidence of financial exclusion exists in Mexico's banking system. For example, between 1994 and 2000 bank lending fell from 74% to 7% of GDP. According to a study by BANAMEX, only 19% of small and medium businesses in Mexico had access to credit from the banking sector in 2000, seriously jeopardizing firms' ability to undertake new capital expenditures or expansion (BANAMEX, 2006). When financial exclusion exists in the formal financial sector, the informal economy becomes the primary source of financing for households and small businesses.

Distribution of formal and informal credit according to income

Income Level	Formal	Informal	Total
Very low	1.0%	9.5%	10.5%
Low	8.6%	21.1%	29.7%
Moderate/High	22.4%	37.4%	59.8%
Total	32%	68%	100%

Source : Biles (2005)

If we take into account the income levels in Valladolid (see chapter 1, Figure 1.25) access to credit is highly uneven. Very low and low-income households comprise about 70% of the population. However, the moderate to high-income group received 70% of all formal credit. Surprisingly, wealthier households also accounted for more than half of total informal credit obtained by all households. Overall, 60% of all financial resources were concentrated among the wealthiest households in Valladolid.

Improving human capital

During the past decade, state government officials have made a concerted effort to improve the quality of human capital in Yucatán. As a consequence, school enrolment, especially at the high-school level, has increased at rates far greater than the national average since 1990. Currently, 42% of Yucatán's population has high-school level studies or greater, well above the national average (37%). In particular, high-school enrolment in rural areas of Yucatán has increased dramatically in recent years.

Yucatán also benefits from a strong system of public and private universities, with a current enrolment of more than 37 000 students. More than a dozen major public and private institutions of higher education and research are located in Mérida. Consequently, the state capital boasts one of the best-educated work forces in all of Mexico, in which 11% of the population has a university education (but only 5% if the whole functional area is taken into account).

Box 2.12 **Successful Private Sector-HEI Linkages**

The *Universidad Tecnológica Metropolitana* (UTM) is one of the few local higher-education institutions (HEI) that have managed to successfully develop linkages with the private sector. Students are required to complete an 800 to 1100-hour internship (*estadía*) in private industry prior to graduation. More than 50% of students find permanent employment in this manner. In addition, 70% of graduates are gainfully employed within two to 12 months of graduation. Furthermore, UTM differs from the majority of institutions of higher education in that it actively works with industry in developing curriculum; the private sector also participates in the institution's board of directors.

The UTM has played a critical role in providing computer programmers, software developers and other qualified labour to support state government's information technology cluster. Given the critical bottleneck for skilled IT labour in Yucatán, other educational institutions would benefit from emulating UTM's focus on applied and technical training.

Mérida has a distinct comparative advantage in higher-education institutions (HEI) in the Yucatán Peninsula. Unfortunately, stakeholders in government and industry do not believe that institutions of higher learning are adequately preparing students for careers in the private sector. Among the problems are lack of training in engineering and other high demand areas, overabundance of degree recipients and a shortage of qualified technicians, and a lack of English and critical-thinking skills. As discussed

above, the concerns of government officials and the private sector are reinforced by high rates of unemployment among young people and university graduates.

Although there are innovation capabilities in Yucatecan institutions, the benefits of high-quality research centres in the state have not been fully exploited. Yucatán ranks 14th in the country in terms of patents (1.03 per 100 000 population), well below the national average (2.01), yet the state receives considerable support for research from the national government (CONACYT). In addition, the number of scientists and researchers is substantial. In 2005, R&D received more than $35 million USD in funding, almost entirely derived from federal sources. With few exceptions, little formal co-operation exists among the government, private sector and HEI in Yucatán. The private sector, apparently, plays little –if any- role in supporting research. This lack of synergy, and the resulting dearth of innovation, is revealed by the limited number of firms in the state that have obtained ISO certification (only 23).

Urban Development

State government officials in Yucatán have made some progress in recent years in developing and implementing a regulatory and institutional framework to control urban development in the Mérida metropolitan region. Important achievements include recent legislation for planning and public administration, as well as zoning and other policy initiatives to regulate the construction of residential developments. Although these policy measures will have a limited impact on many of the issues of sustainability discussed above (such as sewage treatment and lack of green spaces), they will allow city and state government officials to regulate future urbanization while (potentially) addressing "pre-existing" urban development concerns.

State government's most ambitious urban development policy initiative, however, is Metrópolisur, a self-financing urban renewal project that focuses on rebuilding the infrastructural base (primarily housing, commercial areas and public spaces) in a 1 000 hectare area of the southern part of Mérida. With a proposed cost of nearly $100 million USD, policymakers have conceived this initiative as a long-term economic and social development project that will take at least 10 years to complete. The first stage of the initiative entails relocating the airport more than 30 kilometres to the outlying *municipio* of Hunucmá, the construction of the initial round of 14 000 dwellings, a museum and zoo. According to state government officials, the project will be financed by selling the land where the current airport is located for commercial and residential development, which is expected to raise more than $100 million USD in capital. The

relocation of the airport is also expected to promote economic benefits in nearby rural communities.

Policymakers have successfully carried out similar strategies in other parts of the city and extensive cost-benefit analysis indicates that the project will be self-financing. Monies raised from the scheme are expected to more than cover the financing and infrastructure costs associated with the new airport and residential and commercial development. In addition, government officials anticipate that Métropolisur project will generate excess revenues, which may be used to carry out similar initiatives in other parts of the Mérida metropolitan area. Although the project created much conflict and controversy after it was announced in late 2005, it appears to have the support of much of the private sector and civil society. Consequently, full implementation of the project over the next 10 years is probable.

The Metrópolisur initiative is expected to reorganise urban space in Mérida, improve quality of life, improve airport infrastructure, and meet the local deficit in housing. Overall, the project will benefit approximately 20 000 households and 69 000 people in some of the most marginalised areas of Mérida. The ultimate success of the project – at least in social terms- hinges upon the predominantly low-income populations who reside in the southern part of the city and who are largely unemployed, underemployed or employed in the informal economy, acquiring the financing necessary to purchase the housing that will be built. The existing financing schemes of government, financial institutions and private-sector for low and moderate-income housing, need to change accordingly to ensure that the benefits of the policy are geared towards those who need it most.

Marginality and poverty alleviation

Resources for poverty alleviation outside the Mérida metropolitan area are largely derived from federal programmes. Three initiatives, in particular, have been devoted to addressing poverty in urban and rural areas of the state. First, the *Habitat* programme focuses on combating urban poverty in priority zones. The programme began in Mérida and has expanded to other *municipios* throughout the state. In Yucatán, the programme has concentrated on providing necessary infrastructure in urban communities, since only limited funding may be devoted to social projects. Although approximately $15 million USD has been spent in more than 400 projects in the *municipios* of Kanasín, Progreso, Tizimín, Umán and Valladolid (as well as Mérida), the programme's mission is complicated by data considerations that limit the ability of municipalities to design and implement projects that respond to actual needs. Second, the *Microrregiones* programme requires

joint investment by state government and *municipios* in mutually agreed upon infrastructure projects (known as *banderas blancas*). The goal is for municipalities to reach their goals in 11 key areas (Table 2.2); upon successful achievement of these goals, the area is no longer considered distressed. To date, projects have been carried out in 129 communities in 87 different *municipios*, benefiting more than 400 000 people in rural areas of Yucatán.

Table 2.2 Priority Areas for the Microrregiones Programme (Banderas Blancas)

Promotion of economic/productive activities
Provision of electricity
Connection of roads to main highways
Basic education services
Telephone service
Basic health care services
Public computing and internet service
Provision of potable water
Supplying basic food needs
Improving sewage and/or water treatment
Providing solid foundations for dwellings

Source: SEDESOL (2007)

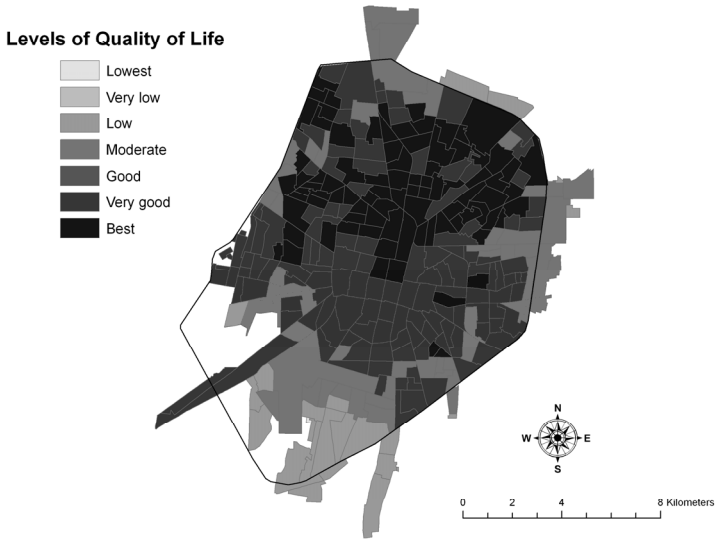
These programmes undoubtedly provide much needed infrastructure and basic services to communities suffering from high levels of poverty and marginality. However, both initiatives appear to overlook the social aspects of poverty, marginality and development. In addition, the participation of civil society in identifying and prioritizing development priorities is missing. Unfortunately, it appears that federal government regulation and lack of fiscal autonomy limit flexibility in spending of funds.

The third federal programme is *Oportunidades*, is the primary vehicle for addressing the social aspects of extreme poverty in rural areas. *Oportunidades* targets female household heads and school-age children with direct income transfers to support education, health care, and nutrition. The programme focuses explicitly on building human capital by providing financial incentives for poor families to keep their children in school. As of early 2007, the programme served more than 130 000 rural households throughout Yucatán. At that time, bimonthly income transfers amounted to more than $14 million USD representing approximately $52 USD per household.

Notwithstanding the positive impacts of *Oportunidades* on schooling, nutrition and household budgets, the programme has been criticised for a host of reasons. However, the emphasis on direct poverty relief (via income transfers) does not solve the long-term, large-scale need for massive investment in rural housing, sanitation, educational and health facilities.

Mérida constitutes a social paradox in that the city provides opportunities and quality of life for residents and migrants from rural areas, but at the same time the rural-urban migration process replicates the concentration and prolongs the cycle of poverty in certain areas. According to a recent assessment of quality of life based on quality of housing, levels of education and literacy, employment status, income, and other factors, the living standards of less than three percent of Mérida's population are classified as low (levels one to three). However, in the rest of Yucatán, 75% of the population suffers from low quality of life. Although poverty in Yucatán is largely a rural issue, poverty in Mérida is geographically localised. The lowest levels of quality of life are concentrated around the periphery and, in particular, in the southern part of the city, in close proximity to the airport (Figure 2.3). In response, state and municipal policymakers have introduced Metrópolisur, not only as a means of reducing disparities in economic opportunity and quality of life, but also to integrate these neighbourhoods to the rest of the city.

Figure 2.3 Levels of Quality of Life in Mérida



Source: INEGI (2007c) Regiones Socioeconómicas de México

The relocation of the airport is also expected to promote economic benefits in nearby rural communities. Although it was highly desirable to locate the airport just next to the port of Progreso, technical studies revealed that the ideal location in terms of logistics was not the best for geological reasons. In any case, the new airport will be located very close to the port of Progreso where also a train with logistics capacities will be built. In spite the airport won't be next door to the port, still an inter-modal approach to logistics should be adopted.

Overall assessment of policy agenda

In general, several shortcomings exist in the current policy agenda for competitiveness and social cohesion in Yucatán. Undoubtedly, policymakers are constrained by relatively inflexible federal regulation (in the case of employment, for example) and significant lack of fiscal autonomy (see chapter 3). State government officials, however, have been very adept at identifying many of the challenges to competitiveness that confront the

region. Unfortunately, given the role of the State Development Plan as the primary vehicle for carrying out planning and policymaking, it is currently impossible to propose and implement initiatives beyond the short to medium-term. As a consequence, policymaking is typically carried out in the context of three or six-year plans and state and municipal governments lack a clear, long-term plan for social and economic development. In addition, due to a lack of career civil service, the planning process cannot be carried out independent of politics. The existing planning framework is further flawed in that the representation and participation of civil society in the process is limited and policymaking process is top-down, rather than bottom-up. Ultimately, the lack of effective policies stems from the incomplete participation of civil society in the establishment of priorities, design of policy responses, and implementation of policies.

Formal co-operation among political entities, not to mention with the private sector, civil society and higher education, is the exception, rather than the rule in Yucatán. As a result, endogenous growth (based on investment, innovation, technology transfer and upgrading of human capital) and sustainable development are constrained. Business leaders and government officials lack a coherent vision of Yucatán's role in the global economy and have not yet converted the region's comparative advantages into competitive advantages. In addition, it is necessary for the state government to adjust the recent adoption development based on clusters in furniture and information technology to include other sectors that entail higher value-added, design processes and the upgrading of labour force qualifications.

Policymaking in Yucatán is also extremely centralised and top-down, but the integration of new generations of entrepreneurs may bring about important changes. Although the political class in Yucatán comes primarily from the entrepreneurial class, little formal collaboration exists with business leaders. In addition, both state government and business leaders need to be more proactive in developing and identifying opportunities for investment. It is important to highlight that the younger generation of entrepreneurs appears to be open to change and together with the senior business leaders have already set out initial steps towards building new partnerships with the state government. However, no tangible plan foster greater co-operation with government and universities or to work towards eliminating obstacles to job creation and economic growth. In addition, the participation of non-governmental organisations (NGOs) and civil society in the political process is extremely limited. Although NGOs in Yucatán have played a more active role politically in recent years, special interest groups that previously served as instruments of government remain the most visible organisations.

During the past years, policymakers in Yucatán have invested generously in providing the necessary conditions for regional economic development (infrastructure, transportation, training of semi-skilled labour, government incentives, etc.). In addition, the state benefits greatly from relative social stability and greater political openness and transparency. However, government officials have not fully exploited the state's strategic location, port and highway infrastructure, and other comparative advantages. Moreover, the private sector lacks co-operative linkages with government and local educational and research institutions, making innovation highly unlikely.

Currently, Yucatán's most obvious comparative advantage remains in a sector (clothing *maquiladoras*) that has failed to develop sustainable linkages with local industries or to create opportunities for greater value-added. In the absence of innovation (usually in design and higher value-added activities), the only real remaining comparative advantage in this sector is proximity to market and the ability to offer rapid turnaround. More recent projects, such as foreign investment in agricultural production, suffer from similar shortcomings. In general, proximity to the final market (United States) and availability of low-cost labour and cheap land are the region's primary comparative advantages. In both cases, policymakers and the private sector have not managed to develop higher value-added activities and the region will increasingly face competitive pressures both from within Mexico and from aboard.

Opportunities certainly exist for economic growth in certain sectors of the state's economy and policymakers clearly display an interest in improving regional competitiveness. However, in recent years Yucatán has largely played a passive role in responding to challenges and opportunities in the global economy. Furthermore, given the limitations discussed above, in the absence of long-term strategic planning and (both internal and foreign) investment, economic development is unlikely to take place spontaneously. In order to address the issues identified above, a new culture of collaboration and co-operation must be fostered among state and local governments, the private sector, civil society, and higher education. Government officials must demonstrate the political will to separate the planning process from the political process and the ability to effectively carry out long-term planning. Only within the framework of a more inclusive participatory process can stakeholders in Yucatán improve regional competitiveness and social cohesion.

Policy recommendations for improving regional competitiveness and social cohesion

In light of the primary objectives of economic development policy in Yucatán, the region's comparative advantages, and the strengths and weaknesses of the existing policy agenda, several recommendations may be offered to improve regional competitiveness and social cohesion.

Expanding linkages with Central America and the Caribbean

Yucatán compares favorably with the rest of Mesoamerica in terms of infrastructure, particularly in terms of the areas most important for competitiveness and productivity: energy infrastructure, transport infrastructure and overall logistics. In order to take advantage of Yucatán's strategic location and to expand access to markets and increase trade, state government officials must pursue greater linkages via air and sea with Central America and the Caribbean. Particularly needed is a regional air carrier to facilitate the movement of tourists throughout the Peninsula efficiently and greater integration of port facilities in Progreso within the regional transportation system. The logistics platform is expected to provide an opportunity to expand the scale of port operations. In addition, the introduction of such flights to Central America and the Caribbean may also enlarge the potential market for a medical hub in Yucatán.

Upgrading participation in global value chains

In light of Yucatán's existing and tenuous comparative advantages in export-oriented assembly and low value-added agricultural production, government officials and business leaders need to reassess the nature of value-chain relationships in these industries. Policymakers must make a concerted effort to upgrade participation in global value chains. Based on Yucatán's strengths and weaknesses, two options are generally available: moving to more sophisticated product lines, which will require upgrading human capital and technology; and transforming supply-chain relationships (forward linkages), in which local firms take on new functions and tasks. The case of clothing and apparel production provides one potentially viable example. The long-term viability of this sector depends on its ability to upgrade from low value-added functions such as assembly to design and full-package production.

Expanding access of SMEs to credit

One of the critical impediments to creating employment and expanding trade and access to markets in Yucatán is the severe lack of financial resources among small and medium enterprises. As a consequence, policymakers in Yucatán have suggested the possibility of a partnership between the Secretary of Industrial and Commercial Development (SEDEINCO) and the private banking system as a means of channelling credit to SMEs throughout the state. In such a scheme, the existing revolving funds administered by SEDEINCO would be leveraged as collateral for loans from the private banking system. Such a strategy has been implemented by NGOs and banks in the United States, in response to the Community Reinvestment Act of 1997. Ultimately, every peso in the loan fund may be used to leverage two, three, five (or more) pesos in financing from private banks, which would enable state government to expand support for the creation and expansion of SMEs.

Linking post-secondary education with private sector

Although Mérida boasts several prominent institutions of higher learning and a fairly well educated population, government statistics belie an important weakness of the educational system – a serious lack of employment in the formal economy for high school and college graduates. As in other areas of Mesoamerica, business leaders identify a serious mismatch between educational supply and the competencies needed for success in the labour market. One potential alternative is for universities to collaborate more closely with business and industry in revising curricula and restructuring and developing academic programmes. The case studies of the IT sector in Costa Rica and the *Universidad Tecnológica Metropolitana* offer possible models.

Promoting innovation through partnerships between government, universities and private sector

Linking post-secondary education with the private sector is but one component of a broader strategy to improve regional competitiveness through innovation. Also needed is greater collaboration with state government and civil society. The case study of the City of Knowledge in Panama provides an example of how such an initiative can serve to complement regional comparative advantage, promote innovation and, ultimately, improve regional competitiveness.

Box 2.13 Generating synergies between HEI and the private sector: The City of Knowledge, Panama

Founded in 1995, the City of Knowledge (*Ciudad del Saber*) is an international complex for education, research, and innovation located in Panama Canal zone. Its mission is to generate synergies between universities, scientific research centres, business and international organisations in order to promote human development (OECD, 2006a). The City of Knowledge is governed by a private, non-profit organisation and overseen by a Board of Trustees comprised of representatives from the academic, business, labour, legislative, and governmental sectors.

The City of Knowledge provides infrastructure and fiscal incentives, support for innovation and research, strategic location, and access to business and higher education services. It has become a place where students and professors, intellectuals and scientists, business innovators and international functionaries exchange ideas, knowledge, and experience. Its resources include a local network of businesses, academic and research, and scientific associates, several international universities and business organisations, and cooperative agreements with a number of international partners, including the Smithsonian Tropical Research Institute (STRI).

The City of Knowledge is comprised by three components: academic, business and international organisations. The academic component of the City of Knowledge offers advanced programmes that range from traditional classroom education to distance education. The academic programmes are international in character and have been developed to stimulate synergy with the other components of the City of Knowledge. The business component is focused on Panama's International Technopark (TIP), which offers services dedicated to fostering interaction, technology transfer, and value-added between national and foreign firms. Target sectors, which include the country's primary competitive advantages, are biotechnology, information technology, and telecommunications. The final component is a growing number of international organisations, which are linked closely with sustainable development initiatives in Latin America and Panama. These organisations offer a variety of services, including academic programmes, promotion of conservation and management of natural of resources, and international co-operation.

Funding urban and regional development projects

In recent years, state government officials have been successful in implementing self-financing urban development projects in Mérida and its functional area. In general, revenues from each initiative have been used to fund subsequent (more ambitious), proposals (Caucel, Altabrisa, Metrópolisur). The financial success of these revenue-generating urban

development projects presents state and local policymakers with an unprecedented opportunity to devote substantial funding for urban and regional development projects. In particular, government officials should consider using part of these funds to address some of the pre-existing concerns in other areas of the metropolitan region – water/sewage issues, land-use planning and zoning, sprawl, public transportation planning, and infrastructure and city services. Furthermore, these resources could prove vital in establishing and providing financial support for an independent entity responsible for long-term planning.

Promoting tourism in rural areas

Although state government officials identify expansion and diversification of tourism as an economic development priority, available data suggest that the public and private sectors continue to invest an extraordinary share of resources in Mérida and the neighbouring port of Progreso. In order to succeed in diversifying tourism and attracting a greater share on international tourism, policymakers in Yucatán should consider re-prioritizing and reallocating financial resources to create the necessary infrastructure in a limited number of rural areas, which offer a diverse array of potentially viable tourist attractions. The case of Valladolid provides an example.

Separating the planning process from the political system

At present, at both metropolitan and state levels in Yucatán, planning and policymaking are synonymous. Policymakers must accept the fundamental distinction between planning, which refers to medium and long-term decision-making to ensure and improve quality of life, and policymaking (or programming), which corresponds to a political process of implementing programmes or initiatives that respond to specific planning needs. In order to separate the planning process from policymaking, government officials in Yucatán should establish a career civil service system that oversees planning. In addition, the planning process should be carried out in participatory fashion (with representation of government, civil society, the private sector and universities) by means of a trust (*fideicomiso*) or quasi-governmental agency with substantial autonomy and political independence.

Three alternatives for improving competitiveness and social cohesion in Yucatán

This final section presents three proposals for improving regional competitiveness and social cohesion in different areas of Yucatán. These alternatives merely represent one potential vision for the state. Any vision for promoting economic development must be carried out within the context of a long-term participatory planning process.

Any proposal to improve long-term competitiveness and social cohesion in Yucatán must build upon existing comparative advantages, generate employment and self-sustaining linkages with the regional economy, and address the fundamental issues of poverty and equity. In general, comparative advantages are localised and spatially discrete and in Yucatán several distinct comparative advantages exist. Three specific cases are considered below.

In the case of Mérida, the most obvious strengths are its human capital, well-developed services sector, strategic location, and infrastructure. In addition, the city's level of human development and generally high quality of life makes it an attractive destination for a variety of economic activities. The southern part of Yucatán, known as the "southern cone", is the most productive agricultural centre in the state. Due to its fertile soils and plentiful rainfall, this region accounts for the bulk of horticultural products and citrus produced in Yucatán. Notwithstanding its agricultural endowments, Valladolid is strategically located halfway between Cancún and Mérida. Additional strengths include its proximity to the pristine beaches of Yucatán's northeastern coast, access to key archeological (Chichen Itzá) and natural sites, and the availability of good air (existing airport in Kaua) and ground transportation infrastructure.

Taking into account the distinct comparative advantages in these three areas of Yucatán, it is possible to devise policy alternatives for each region. Taken separately, these proposals merely promote local economic development. Jointly, these strategies contribute to more balanced regional development and contribute to competitiveness and social cohesion in Yucatán while addressing the fundamental issue of equity.

Proposal 1: Improve Valladolid's Attractiveness to Better Exploit its Potentials

Currently, Valladolid's economy relies primarily on a functional relationship with neighbouring rural communities, which account for 80% of retail trade, and substantial *maquiladora* employment. Although state and

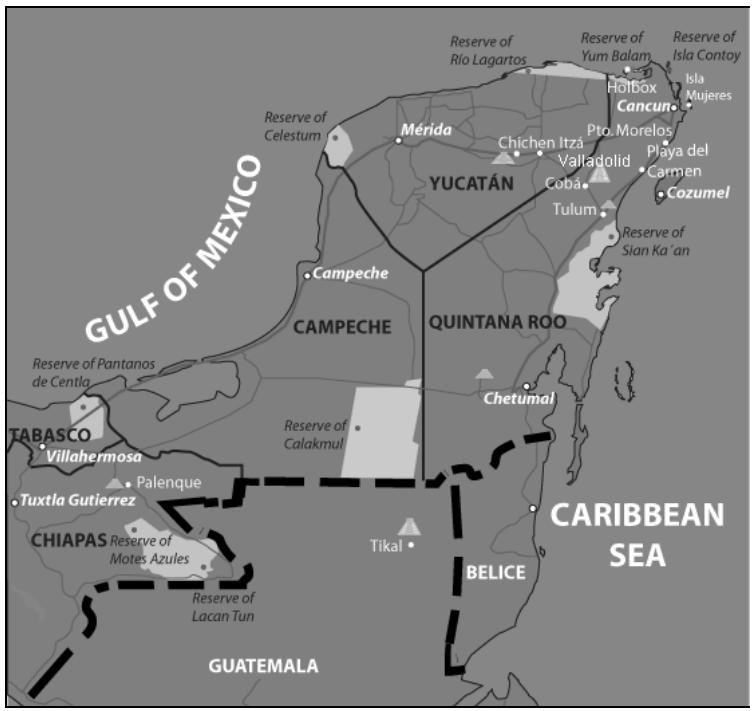
local policymakers claim that the city is strategically located with respect to Mérida and Cancún, Valladolid has yet to take advantage of this comparative advantage. Basically, since the mid-1970s Cancún has become the safety valve for excess labour in Valladolid and Mérida remains the market centre for higher order goods and services. In general, co-operation between Valladolid and these two cities is non-existent. In addition, a rivalry exists with the neighbouring *municipio* of Tizimín, impeding substantive collaboration.

Tourism is currently at an incipient stage in Valladolid. Although investment is lacking in infrastructure, the recent opening of a new public (technological) university in the city with a degree programme in tourism is expected to have a positive impact on the sector. Local policymakers and state government officials should take advantage of Valladolid's strategic location (Figure 2.4) and existing transportation infrastructure to covert the city into the "Gateway to the Mundo Maya" and its 25 UNESCO World Heritage sites. In addition to creating employment opportunities for local residents, this strategy could have the positive effect of promoting some out-migration from the sprawling metropolitan areas of Cancún and Mérida.

Proposal 2: Agricultural production and food processing in Yucatán's southern cone

Despite the generally low levels of productivity in rural areas, high value-added per worker is found the food processing sector. Given the importance of the primary sector in terms of employment, and the relatively high levels of productivity in food production, the comparative advantage of rural areas of Yucatán clearly lies in the processing and packaging of agricultural and livestock commodities (particularly pork and poultry). Furthermore, in light of the high levels of output per unit of land for certain horticultural commodities (honey, papaya, chile habanero, coconut and cucumber, for example), an opportunity exists not only to link small-scale growers with food retailers and export markets, but also to process and package these products as a means of adding value and creating additional economic opportunities in rural areas of the state.

Figure 2.4 **Valladolid's Location within the Mundo Maya**



In short, the challenge for policymakers is to take advantage of favourable climate, abundant water and land resources, limited needs for technology and scale economies, and the technical know-how at universities and research centres to evolve from mere agricultural production to processing activities that generate greater value-added.

The economy of Yucatán's southern cone depends, to a large extent, on small-scale horticultural production. This region is responsible for a significant share of many crops grown in Yucatán, including watermelon, grapefruit, mangoes, oranges, tangerines, limes, chile peppers, squash and avocado. Given the relatively high levels of productivity in food production, policymakers should consider the possibilities of developing a cluster based on the packaging, processing and distribution of these (and other) agricultural commodities. Such a strategy would be especially warranted in a region like the southern cone, which suffers from high levels of out-migration.

Proposal 3: Mérida as centre of innovation

Since the 1980s, the economy of the Mérida metropolitan region has largely depended on the commerce and services sector. Employment in commerce and services, however, is driven, at least initially, by export industries. With limited exceptions, Yucatán generally lacks major export industries and those industries that do export, such as clothing and apparel *maquiladoras*, are among the least productive sectors in the state. Much of the growth in Yucatán's commercial and services sectors during the past three decades may be attributed to the rapid growth of Campeche and Quintana Roo, neighbouring states in the Yucatán Peninsula. As these states develop their export sectors (tourism and petroleum, respectively), they are also expanding their service industries. There is nothing preordained about Mérida's role as the commercial and services hub of the Yucatán Peninsula. The city's dominance in services was built in the early part of the 20th century due to the *henequen* industry, at a time when it was the only major city in the Peninsula. Its current position is the result of an initial advantage over other regions and historical accident but is in jeopardy of decline.

As a consequence, policymakers must move the metropolitan region away from the low productivity assembly of semi-finished goods to a higher productivity 21st century economy that imports knowledge and technology as a means of improving human capital and promoting innovation and regional competitiveness. The transformation of Mérida into a centre of innovation, and the concomitant massive upgrading of human capital, will require long-term collaboration involving government, universities, the private sector and civil society. The City of Knowledge in Panama (see Box 2.13) provides one potential model. The International Knowledge City and Technological Park in Monterrey, Mexico, which promotes innovation and development in biotechnology, information technology, health and nanotechnology, is another example.

In the case of Yucatán, policymakers should build on its *Plataforma Logística* proposal and consider establishment of an international centre for innovation that takes advantage of Mérida's quality of life, strategic location, and infrastructure in order to import knowledge and transfer technology to local entrepreneurs, government officials, and students. Local public and private universities would play a central role by making use of existing collaborative agreements with foreign institutions to add an international dimension to the project. This proposal is facilitated by NAFTA and educational policy in the United States, Canada and Mexico, which specifically contemplate the mobility of researchers, scientists, and students. One possible idea is to develop shared curricula with international universities so that foreign students can study in Mexico and Mexican students can "study abroad" without leaving the country.

Chapter 3
Institutional Framework and Governance for Competitiveness in Yucatan

Introduction

The Yucatán Peninsula was a territory that remained isolated for many years. Its integration process to the rest of Mexico was slow and difficult, particularly during the nineteenth century when various independence attempts were undertaken which led to a reduction in size and a division of the region into three states. What is more, the State of Yucatán pursued inward-looking strategies for development furthering isolation. Nonetheless, towards the end of that century henequen (sisal) exploitation allowed for economic growth and tapping into both local and international markets.

The dependency, however, on one product provoked a crisis in the development and definition as to where the state could head when henequen was substituted for synthetic fibres in the mid-twentieth century. This crisis peaked just as Yucatán's peninsular neighbours started their own accelerated growth in specific sectors linked to the national economy: Campeche with oil and Quintana Roo with tourism.

The future of the state is based on social and economic diversity as much as on synergies to develop collectively strategies for growth. Nowadays, in spite Yucatán's fast growth rates over the past years, the state shows lower levels of income than its neighbours. Nevertheless, its geographic location allows for the creation of new alternatives for growth. It also has strong human potential, which in areas such as health and education has led to higher standards than those of neighbouring states. Unlike them, Yucatán can now determine its future not only depending on a single economic sector. However sustainable growth based on a variety of activities can only be the product of including all social and economic actors to reach agreements to collectively set up a strategy. Such a strategy would be based on synergies and co-operation that would allow for mechanisms

designed to create and implement new development strategies for sustainable growth.

Growth in Yucatán has been characterised by protectionism to local businesses that has created perverse incentives for innovation. Local entrepreneurs encouraged by political actors, have historically been agents of growth. However, the government has traditionally been protecting businesses at the cost of also generating a strong aversion to risk-taking that hampers in innovation. Furthermore, in the face of market competition, state protection to local entrepreneurs has also resulted in a weak sector in terms of influencing policy; on the contrary, protectionism has been associated to a passive entrepreneurial attitude that relies heavily on government-led initiative.

The change in attitudes recently experienced among actors needs to be furthered and greater conscience of each other's role in promoting competitiveness is essential. The centralisation and verticality so characteristic of PRI governance, may have favoured risk-aversion and for some years the thriving henequen economy strengthened such a public-private agreement. These attitudes have started to change in the last years with a new generation of political actors and local entrepreneurs. While the former show a more open position to policy making inviting all sectors to participate in the process of planning, the latter exhibit a more proactive attitude and are more conscious of the region's need for competitiveness. However, the threat of traditional policy-making oriented towards the government and a society that remains passive to State's initiative are still one of the governance challenges for Yucatán.

Yucatán's state government, although plural and open to new ideas, tends to be traditional in its form and functioning: it is *government* oriented and not *governance* oriented. Business groups are open to pondering the future of the state in the mid- and long-term, but are wary of organising in a more effective and pro-active manner. They are organised through chambers but have not created public-policy networks for development and competitiveness. The society at large is politically participative and has encouraged pluralism in power, but has shown little interest in organising civil society participation within local politics, preferring formal representation to direct action.

Institutional Framework in Mexico: A Centralised Federalism?

Mexico is moving from a highly centralised system of government – in which the federal government maintained an unquestioned power over other levels of government – towards a much more decentralised and federalist

arrangement. Nowadays, an increasing number of political actors, both at the national and sub-national levels, have a greater say in public affairs and regional governments have started to play a more active role in deciding their on future. Many of the competencies by Constitution assigned to local governments have now for the first time acquired real validity as a result of the transformations of the Mexican political system.

Mexico is a Federal Republic with a representative and democratic system of government. Public power is divided across the national territory in three levels: the central (federal) government; 32 federal entities (31 States and 1 Federal District), and close to 2 500 municipalities. During most of its modern history Mexico was characterised by having a highly centralised political system. Formal and legal provisions, as well as most of the political authorities at the federal, state and local levels were subject to the commands and control of the Presidency. As a consequence, the capacity of lower orders of government to perform their functions autonomously and particularly to respond more directly to the population's wishes was curtailed.

As a result of the democratic transition that has taken place and the ensuing enhanced political competition, there has been a substantial redistribution of decision-making across the three levels of government. Although a new governance system amongst the different levels and branches of government is starting to appear in several areas of policy making, improvements are necessary particularly regarding the conditions of federal transfers and the capacity of sub-national governments to make real policy decisions.

The Federal Level

Although the Constitution divides public power among the aforementioned three levels of government and establishes separate functions for the executive, legislative and judiciary powers, in reality the federal and executive, namely the Presidency concentrated the decision-making process. The President is both the Head of State and Chief of Government and is elected by popular vote for six-year terms. In contrast, the Mexican bicameral Congress, as well as the judicial branch traditionally exerted far smaller powers than the Executive. Nevertheless, with the recent emergence of a multiparty democracy Congress is increasingly playing a more active role. This legislative body is divided between the Senate aiming at representing states, and the Chamber of Deputies who are elected to represent electoral districts usually part of cities or smaller communities.

The President also had considerable influence over the judiciary power. Upon approval from the Senate, the President appoints the 11 judges that

integrate the Supreme Court of Justice. In addition, there are 23 federal judicial circuits with a total of 346 courts and 560 judges. Being appointed by the President, the judiciary and especially the Supreme Court enjoyed very little autonomy. As a result of recent actions to insulate judges from political pressure, the Supreme Court is now playing a more active role in such areas such as intergovernmental disputes (constitutional controversies), and even ruling against the position of the President.

Sectoral ministries were strong and the previous scheme centred on the President implied weak mechanisms to co-ordinate them. Such mechanisms weaken in turn, the co-ordination of sectoral programmes, particularly on territorial development where sectoral policies interplay. Cross-ministerial co-ordination is thus of key importance for the implementation of programmes at the territorial level. Federal countries have chosen different approaches for inter-ministerial co-ordination. Austria has long-developed an informal approach which places greater emphasis on consensus-building among different ministries. Switzerland has chosen a more formal approach where ministries dealing with territorial development issues have to convene regularly in an inter-ministerial body whereas in the USA, the Cabinet of the President carries out policy co-ordination. Notwithstanding the specific model chosen it is important that formal or informal mechanisms for policy co-ordination are used and that co-ordination does not increase, but reduce transaction costs between decisions of the President and their implementation. In the case of Mexico a greater institutionalisation of co-ordination mechanisms for public policy seems to be desirable.

The State Level

The strong centralism can also be found at the state and municipal levels. State governors were highly dependent on the wishes of the Presidency, and in contrast to municipalities, lacked the formal autonomy granted to them by the Constitution. Likewise, state governor's replicated the model at the regional level. Mexican state governors remain the only executive officers to be elected state-wide and do not have to contend with other potentially powerful elected officials such as a Deputy Governor or a Treasurer as in the USA (Ward and Rodríguez, 1999).

As in the federal level, the state Congress had long been confined to a role of simply responding to the executive's initiatives. The role of the state Congress is manifold. First, it oversights the state executive actions by examining and given the case approving the state's public accounts and the state budget, as well as determining taxes Second, it supervises municipal governments by examining and given the case approving the municipal councils' income law, as well as by controlling their public accounts;

resolving conflicts between municipalities and if necessary, suspending the municipal council or removing members and can create new municipalities. Third, it legislates in areas related to state government by introducing regulatory decrees and by-laws or by directly reforming the state Constitution. Fourth, it validates major changes in administration such as the nomination of magistrates to the local Superior Court or the elections for state governor.

The Municipal Level

Despite it is recognised in the Mexican Constitution, municipal autonomy has been very limited rendering it the weakest tier of the Mexican government. However, the 1983 Constitutional changes in addition to greater political competition have served to strengthen municipalities. A new redistribution of the decision-making process in social, economic and cultural areas, have led to greater municipal autonomy allowing municipal problems to be solved using their own resources coupled by a decentralisation programme and training of local servants (OECD, 1997). Legally municipalities have no legislative function and can only make regulations within the framework of state and federal laws. They are responsible for the provision of many public services such as drinking water and sewage, retail and wholesale markets, and public security. Tax rates have to be approved by the state legislature and municipal accounts are audited by the state controller who then reports to the legislature, but they are heavily dependent on federal and state transfers. As a result of the 1983 reform, their legal authority was reinforced, which conferred to them some regulatory powers without prior agreement from the state Congress. It also fixed minimum fiscal responsibilities and granted exclusive authority for property taxes as well as the right to partake of public revenue.

Federalism in Mexico

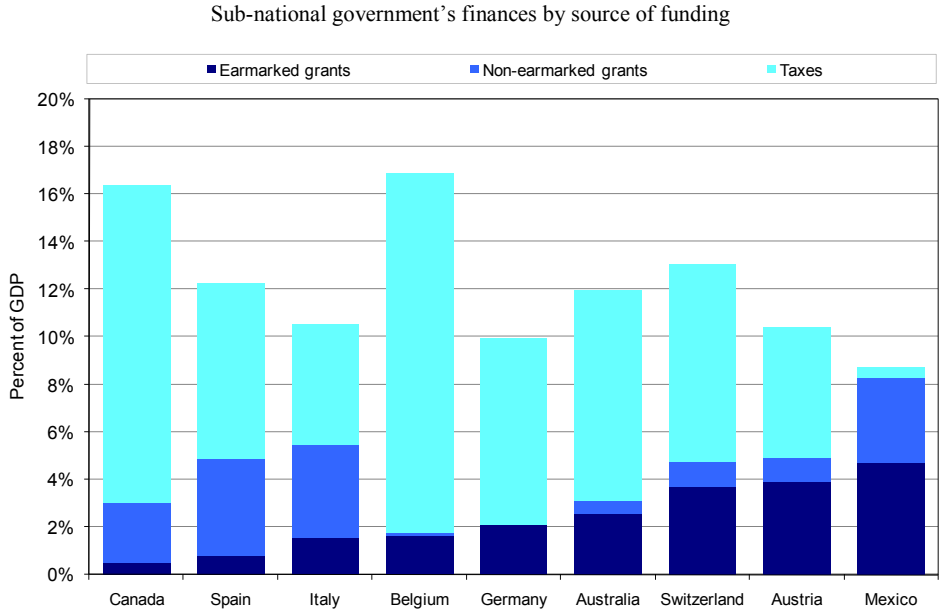
Despite the efforts to promote regional autonomy and social development, state and municipal governments continued lacking the capacity to exercise autonomously the responsibilities granted to them by law. A politically costly process of structural economic reform started in the early eighties, including initial decentralisation steps. Thus, the municipal revenue-raising capacity *vis-à-vis* the state government was reformed. Another noteworthy action was the implementation of the *Programa Nacional de Solidaridad* (PRONASOL), a community participation programme aimed at improving the living conditions of marginalised groups by promoting balanced regional development and strengthening the participation of social organisations and local authorities. Nonetheless, these

gradual approaches did not actually generate a fundamental change in the Mexican governance system, because rather than bringing about proper decentralisation or devolution, they constituted initiatives of deconcentration, shifting power to regional representatives of the centre. To some extent, the political control of the Presidency remained untouched or even strengthened as in the case of PRONASOL where the President was able to bypass state governors and municipal presidents to distribute funds.

The ongoing transition towards a decentralised and more federalist arrangement needs to be based on solid instruments of institutional development, particularly concerning accountability, institution building, vertical co-ordination, and co-ordination across ministries. In effect, accountability is of paramount importance for all three branches of government, especially in terms of the need to strengthen the role of Congress in fulfilling its "watchdog" functions *vis-à-vis* the executive (Ward and Rodríguez, 1999). In this respect, as was mentioned great progress can be perceived as a result of democratisation and increased power sharing. Likewise, the Ministry of the Public Management (Secretaría de la Función Pública) has taken positive steps as the internal auditor of the executive branch. In turn, its legislative counterpart, the *Auditoría Superior de la Federación*, has farther-reaching capabilities to oversee public finances.

Mexican fiscal federalism is characterised by a significant fiscal gap that clearly sets the country apart from other OECD countries. Mexican sub-national finances reveal a sharp discrepancy between transfers from the central government and state's own-resources stemming from local taxation. Among OECD countries with federal institutional arrangements, Mexico's sub-national governments are not only the regions of the OECD with least resources as a proportion of GDP, but they heavily rely on transfers. The lion's share of public finances in Mexican states are either earmarked or non-conditional transfers from the federal government and local taxes make only for a negligible part of their resources (Figure 3.1). Furthermore, sub-national governments in federal countries in the OECD such as Canada, Belgium, Germany or Australia derive much of their resources from local taxation. As a result, regions in these countries are highly autonomous. When transfers are used, many federal countries notably Canada, Spain and Italy rely on non-conditional as opposed to earmarked transfers, and even when countries use more earmarked funding than non-conditional transfers, as in the cases of Austria or Switzerland, they all have an important part of their resources stemming from their own taxation. In contrast, Mexico is the OECD federal country with the lowest local taxation rate and the highest proportion of resources conditionally transferred to regions, a combination that curtails autonomy and decision-making.

Figure 3.1 **Structure of Public Finance in Federal Countries in the OECD**



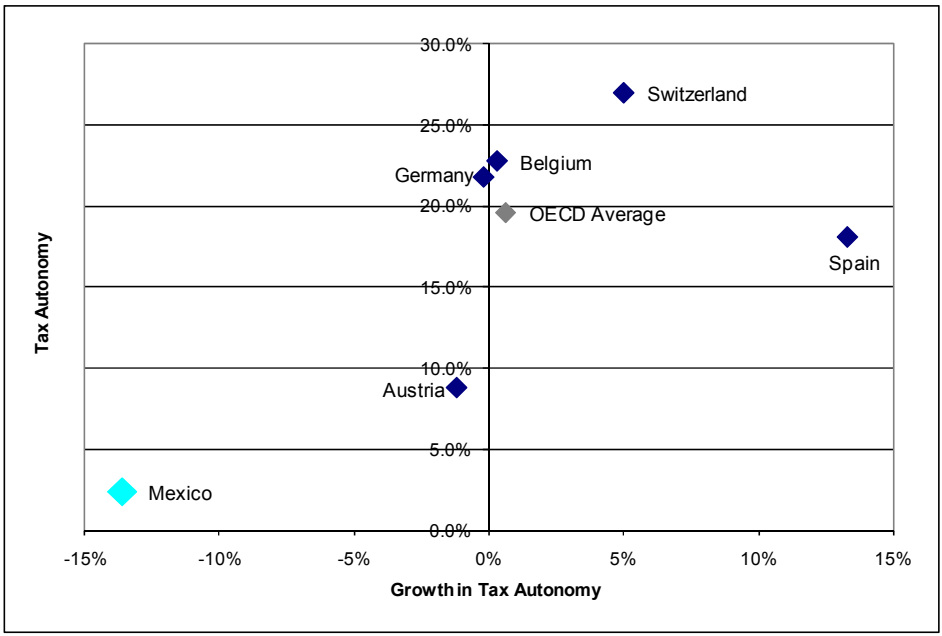
Source: Modified from Bergvall, D. et al (2006)

Revenues in Mexican States and Municipalities

Mexican states are not only the regions with the lowest taxation among OECD federal countries, but tax autonomy has also deteriorated over the years. Mexican states' taxation represents barely 2% of total revenue in the country, whereas the OECD average for regions in federal countries is ten times greater. Belgian, German or Swiss regions account for over 20% of total taxation and Austria, the lowest figure in the group after Mexico, displays tax autonomy levels of almost 5 times greater than the latter. Moreover, while the OECD average for federal countries and most of them have sustained similar levels of tax autonomy (near-zero growth rates), Mexican regions saw their autonomy reduced by 13% between 1995 and 2002 (Figure 3.2). In contrast, Spanish regions' tax autonomy expanded by the same rate that Mexican states' were diminished.

Figure 3.2 **The Evolution of Tax Autonomy in OECD Federal Countries**

Tax Autonomy and its Growth 1995-2002



Tax autonomy refers to tax revenues in sub-national governments as a proportion of total revenues.

Source: OECD (2007b) Taxing Power of Local and Regional Governments in OECD Countries

Transfers account for the bulk of resources in Mexican states and the degree of freedom to use those resources is rather limited. Federal transfers to states account for around 90% of all resources at the regional level (Figure 3.3). On average, Mexican states receive unconditional grants (branch or *Ramo 28*) that account for nearly 35% of their revenue and a set of earmarked grants (*Ramo* 33) accounting for around 54% of sub-national revenues. Own sources of revenue are a minor contribution to state finances as they represent 7% of total income. The contribution of all federal transfers to total revenue has a limited variation by state, ranging from around 80% in Sonora or Nuevo León to around 95% in Chiapas or Oaxaca (Figure 3.4). However, conditional transfers vary much more by state. Earmarked transfers account as much as over 70% in Oaxaca or Guerrero, but as little as 40% in Nuevo León, Sonora or Tabasco. In the case of

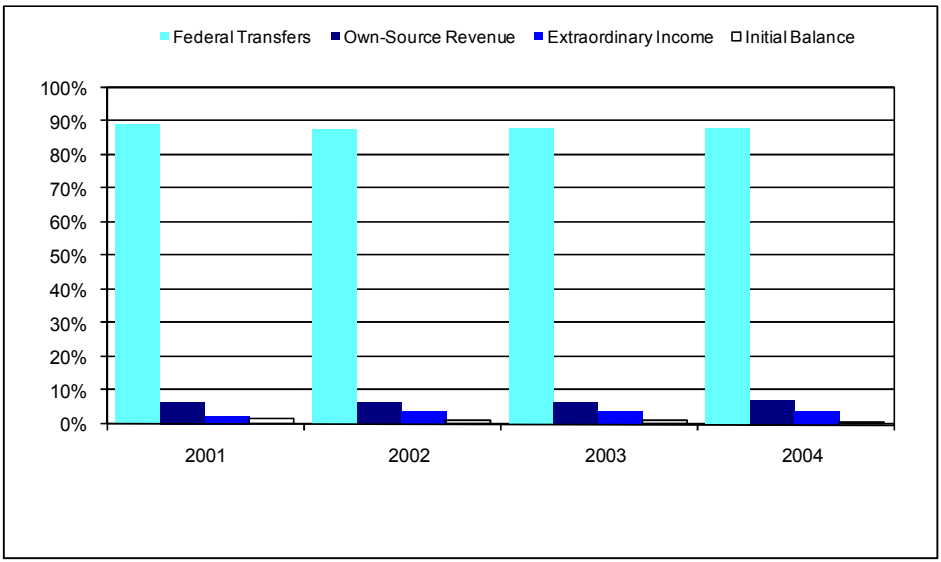
Yucatán, earmarked resources represent well over half of the state's resources and unconditional transfers account for around one-third of regional finance. Yucatán relies heavily on transfers – earmarked and unconditional – from the federal government even more so than the average of Mexican states.

Earmarked transfers are channelled to states through seven funds that heavily address social issues but are tightly linked to payments to the education system particularly salaries of teachers. Almost two-thirds of Ramo 33 resources are allocated to education through three of the seven funds, namely the Basic Education (*Fondo de Aportaciones para la Educación Básica y Normal*), the Technological Education (*Fondo de Aportaciones para la Educación Tecnológica*) and the Multiple Transfer Funds (*Fondo de Aportaciones Múltiples*). Two other funds, the Health Services Fund (*Fondo de Aportaciones para los Servicios de Salud*) and, once again, the Multiple Transfers Fund make up for about 11% of earmarked grants to states. A further 10% is allocated through the Social Infrastructure Fund (*Fondo de Aportaciones para la Infraestructura Social*). Together these five funds represent 87% of all conditional grants tackling social issues such as education, health and infrastructure. As a consequence, 70% of all expenditures on education and 55% in health are decentralised (Scott, 2004).

Apart from user fees, the payroll and the property taxes are the most important own-revenue resources for Mexican sub-national governments. There is substantial variation across states, however. Most notably, Chihuahua and Baja California – the two largest *maquiladora* employers-chiefly through a payroll tax are the states with the largest autonomy rates (17.3 and 12.3% of total revenue from own sources respectively); at the other extreme, Guerrero (2%), Colima (3%) Oaxaca or Morelos (both 3.2%) show feeble resources levied through own revenue.[1] Typically wealthier regions display greater shares of revenue from own sources. In the case of Yucatán only just over 5% of their resources stem from own sources.

Figure 3.3 **Average Revenue in Mexican States**

by source of income 2001-2004

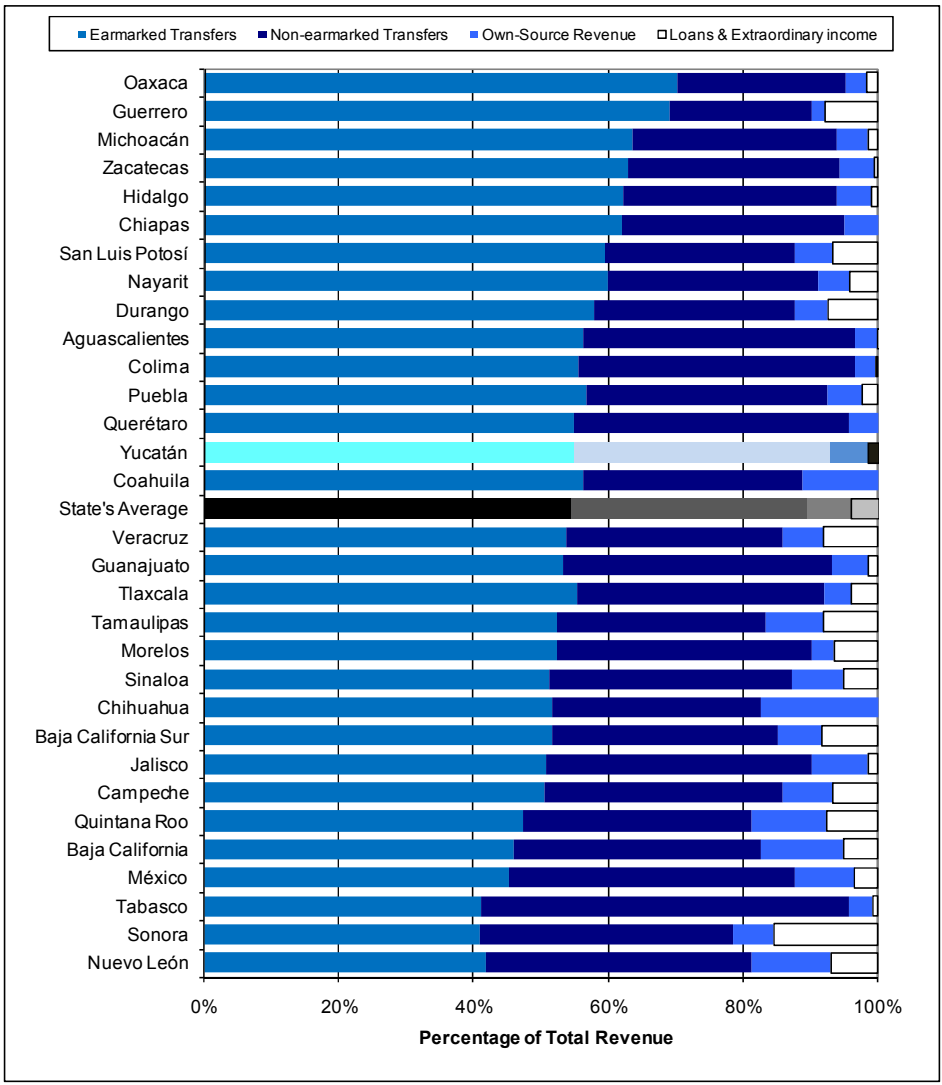


Source: INEGI (2006) Finanzas Públicas Estatales y Municipales 2001-2004

At the municipal level, autonomy is less compromised than at the state level. If the 300 most representative municipalities are taken into account, around two-thirds of revenues stem from state or federal transfers, whereas own-source revenues such as taxes make up for about one-quarter of all municipal income. In contrast, own-source revenue at the state level is on average around 7% of total income (Figure 3.3). Richer and more populated municipalities such as Monterrey, Querétaro or Chihuahua have larger autonomy levels. Transfers represent as low as one-quarter of total revenue in the case of Monterrey and own-source revenues can amount for half of municipal income in Chihuahua (Figure 3.5). In contrast, smaller municipalities are typically subject almost entirely to transfers, such as in the case of Papantla in the state of Veracruz, where transfers represent more than 90% of all income. In the case of Yucatán, Mérida is less dependent on transfers than other less urbanised municipalities such as Tizimín.

Figure 3.4 **Revenue by State**

by source of income 2004



Mexico City (DF) is excluded from the analysis.

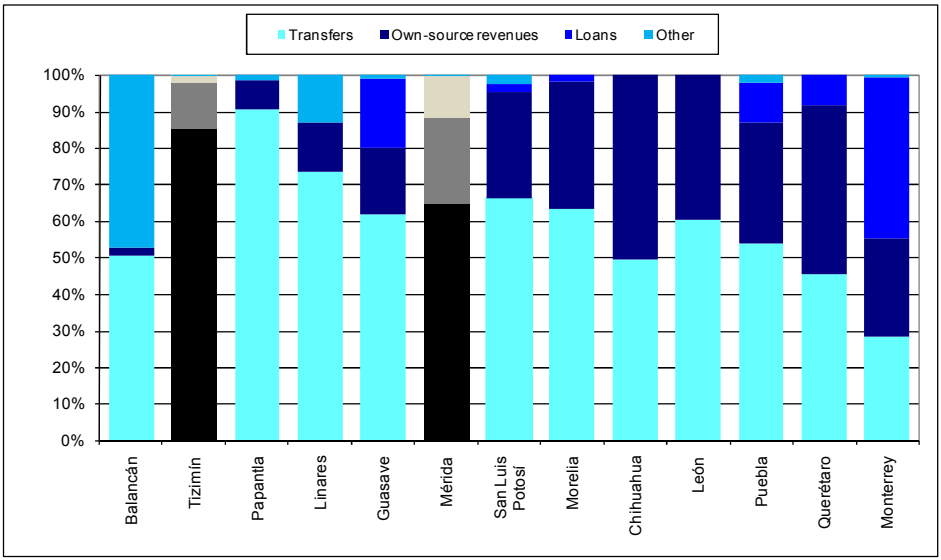
Own-source revenue refers to taxes, permits, licenses, products and rights. Unconditional transfers refers to resources transferred by the federal government to states as a participation of national taxes such as value-added tax or the income tax,

Figure 3.4 **Revenue by State (*cont.*)** whereas conditional resources are transferred by special earmarked funds to states with no freedom of spending.

Source: INEGI (2006) Finanzas Públicas Estatales y Municipales 2001-2004

Figure 3.5 **Revenue in Selected Mexican Municipalities**

by source of financing



Source: INEGI (2006) Finanzas Públicas Estatales y Municipales 2001-2004

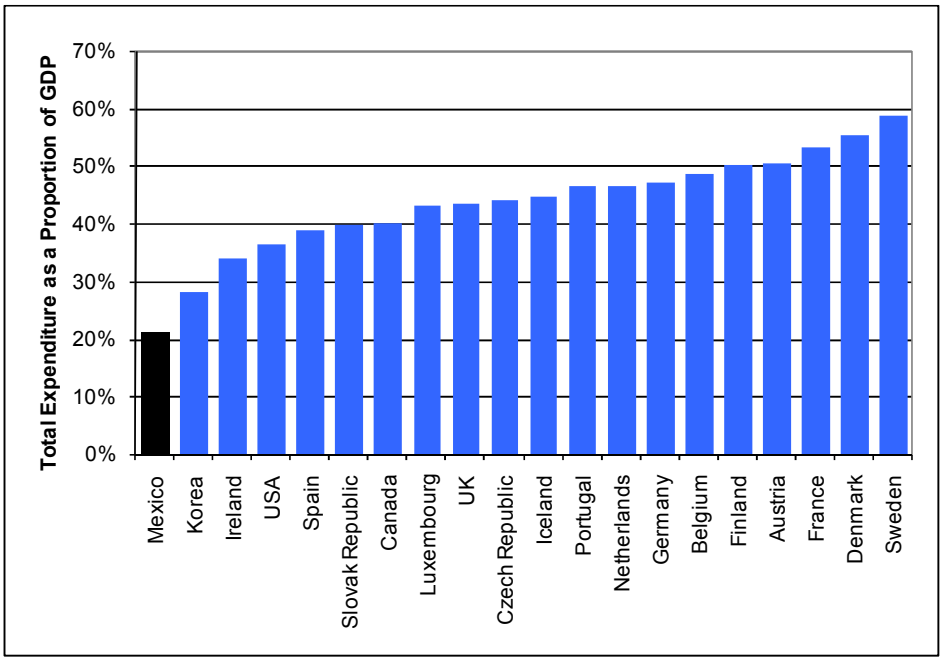
Expenditures in Mexican States and Municipalities

Mexico is the OECD country with the lowest level of expenditure and what is spent lacks coherence with policy objectives. Mexico's total expenditure represents just over 20% of GDP and contrasts with Canada or Sweden's at nearly twice and three times that proportion respectively (Figure 3.6). Public expenditure in Mexican states is heavily concentrated in paying for staff bureaucracy and providing subsidies. Payments to staff widely vary across states in Mexico from small proportions ranging from5 to 6% in states like Hidalgo, Morelos, Baja California Sur or Zacatecas, to

states that spend half of their resources in bureaucracy such as Coahuila or Michoacán (Figure 3.7). In contrast, the vast majority of states spend an important share of their earnings in subsidies that can exceed two-thirds of total state revenue as in the cases of Aguascalientes or Zacatecas. However, in the case of infrastructure (public works and social action) states allocate resources in a more moderate way. These allocations can be as small as in Tabasco (0.7%) or as large as nearly one-quarter as in the case of Tamaulipas, but nonetheless three-quarters of all states invest less than 10% of their total revenue in public works (Figure 3.5). In the case of Yucatan, the state spends two-thirds in staff and subsidies and only 6% in public investment which contrasts with municipal spending in Yucatán that places more emphasis on infrastructure (see Figure 1.38).

Figure 3.6 **Expenditure in OECD Countries**

Total expenditures as a proportion of GDP (current prices for 2004)

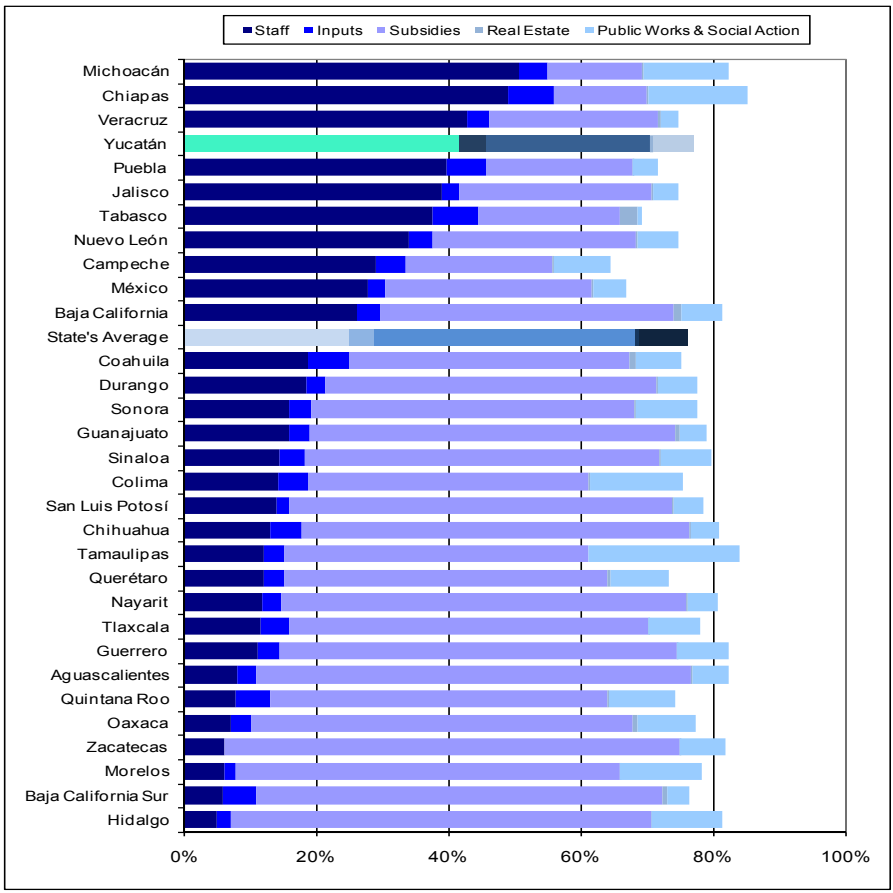


Figures for Belgium refer to 2003 (latest available figure) all other countries use 2004 figures.

Source: OECD (2007c) Annual National Accounts Database

Figure 3.7 **Public Expenditure by State**

by major concepts in 2004



Mexico City (DF) was excluded from the analysis.

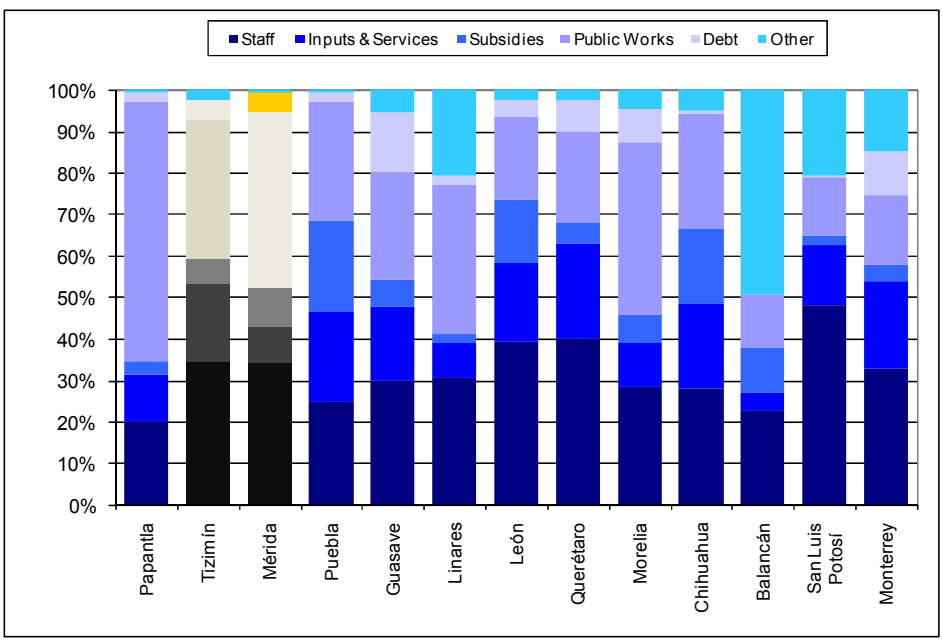
State's expenditures do not reach 100% as the transfers from the federal and state governments to municipalities, as well as "other expenses" were excluded from the analysis to be analysed elsewhere in this report.

Source: INEGI (2006) Finanzas Públicas Estatales y Municipales de México 2001-2004

Expenditure at the municipal level seems to replicate trends at the state level. Although expenditure in staff widely varies across municipalities according to size, the proportion of resources allocated to bureaucracy is similar to the levels in many states in Mexico. The 300 most representative municipalities according to INEGI, show that large municipalities in Mexico use between one-quarter (Puebla) and one-third (Monterrey) of total resources in salaries of staff (Figure 3.8). Medium-sized municipalities spend between 28% (Chihuahua) to nearly half (San Luis Potosí) of their resources on staff, whereas smaller municipalities spend less than one-fifth (Papantla, Veracruz) to one-third (Tizimín, Yucatán). Mérida spends as much as less urbanised municipalities in Yucatán such as Tizimín, even more than the Mexican states' average, but much less than what the state of Yucatán allocates to staff payments.

Figure 3.8 Municipal Expenditures in Mexico

Selected municipalities by type of spending



Source: INEGI (2006) Finanzas Públicas y Municipales en México 2001-2004

The most evident problem of Mexican fiscal federalism is that taxes are highly centralised. The standard assignment of tax types across levels of government generally suggests that taxes on less mobile resources and benefit taxes, principally in the form of user fees can be assigned to lower level governments. The best taxes for state governments are usually thought to be sales taxes and non-progressive taxes on labour, while land or property taxes are thought to be the best revenue source for local governments. While all levels of government can employ user fees, they are particularly useful for local governments. Current taxation in Mexico does not allow for sub-national government's use of income taxes, a practice that is widespread in OECD countries.

Congress approved in 2002, a tax reform package aiming at increasing taxing power of the states. On the business side, new incentives for investment include immediate expensing of investments outside of Mexico City, Guadalajara or Monterrey as well as immediate expensing of investments within these areas for labour-intensive firms that use eco-friendly technology. New taxes on goods and services have been added. States also received new taxation options. In particular, they are now allowed to add an additional rate of up to 5% to the personal income tax and an additional rate of up to 2% on individuals with commercial activities. States can also now charge a retail sales tax of up to 3% (except on goods that are now exempt under the current value-added tax). Combined, the new taxing powers appear modest, particularly if compared to the initial government reform proposal that, inter alia, provided a shift of 3 percentage points of the value added tax to the states. Moreover, states appear to be reluctant to make use of the new taxing prerogatives.

A number of responsibilities and expenditure rights were devolved to states and municipalities in the last decade. Today, the central government is exclusively responsible for defence, foreign affairs, monetary policy, mail and telecommunications, and labour policies. Housing is primarily the responsibility of the central government, though some states have housing agencies. Central and state governments share industrial policy and tourism. States sometimes have separate tourism programmes. Education is quite centralised although central, state, and local governments all have some spending responsibility. The central government sets the curriculum, provides funding, and trains teachers and sets wages. Some states have developed a complimentary system of state financed schools at the high school and university level and are responsible for administering the federal schools. Municipal governments have a limited role but are responsible for school maintenance and some construction concurrent with the state (Cabrero and Martínez-Vázquez, 2000).

Health, transportation and social policies are also quite centralised albeit states have some responsibilities. The central government sets health policy, determines wages, and invests in infrastructure. States administer programmes and are responsible for primary care for both the rural and urban poor. Road construction and maintenance are split between the three levels with each having responsibility for their road system. Parks and public transportation are split with all levels of government providing services that correspond to their geographic area. Water supply and sewage are joint state-municipal functions while garbage collection is done at the local level. Social assistance programmes are funded by the central government through *Ramo 28* and *Ramo 33*, but are implemented by state and local governments with the former co-ordinating with SEDESOL (the central level Ministry of Social Development) for that effect.

Two particular branches of expenditure, namely *Ramo 28* and *33* channel most of conditional and unconditional transfers to municipalities. On the one hand, the *Ramo 28* transfers to *municipios* comprise mainly the *Fondo General de Participaciones* (General Participation Fund*)* that on average, account for 63% of all *Ramo 28* contributions and 34% of state and federal transfers to municipalities. States are required to transfer 20% of the *Fondo General de Participaciones* to municipalities; consequently, a large proportion of the latter's revenue stems from this fund. On the other hand, *Ramo 33* transfers to *municipios* are divided into two funds,[2] the social infrastructure (FAIS) and the municipal strengthening (FAFM) funds. Together, the Ramo 28 and 33 grants accounted for 77% of all state and federal transfers to municipalities in 2004.

Although local taxes can be levied locally, success in accruing resources through such means is curtailed by the capacities and skills at that level of government. Municipalities can suggest property tax rates to the State Congress, where the rate and base is established. Collection of the tax is left in the hands of the municipalities, although many municipalities lack people with the necessary administrative skills. Some states, such as Nuevo León or Chihuahua, have incorporated special grants to municipalities that are distributed partly on the basis of tax effort in collection of property taxes.

Accountability and lack of incentives for efficient spending

Mexican state and local governments do not fully seize the gains of decentralisation. First, the heavy reliance on transfers blurs responsibilities for spending decisions. Although some discretion in how to spend public funds is allowed for unconditional grants, state and local governments receive most funds from conditional transfers. Their use is tightly prescribed, and there is little incentive to spend money efficiently. Transfers

allow state or local officials to escape responsibility for bad projects, the blame for which can always be placed on higher levels of government. Moreover, excessive reliance on transfers may result in a mismatch of funds and demands for public services. Unless transfers exactly match possibly diverse demands for public services, some states will end up consuming non-optimal quantities of public services. Moreover, it is both costly and difficult for the central government to acquire knowledge of each state's demands, which may change over time.

Second, the restrictions related to re-election further decrease the accountability of public officials. Mexican election laws limit most terms to three years and ban immediate re-election, being allowed only after at least one term out of public office. The electorate has no way to punish or reward a politician that does not face re-election, and although party loyalty plays a part, the public official has fewer incentives to always act in the general interest or to use public funds efficiently. Even if taxes and other resources were raised locally, the Mexican election system prevents a long-term commitment towards more accountability in policy-making and public spending. The citizenry sees constrained its capacity to punish bad decisions of local officials and reward good ones through the ballot box. The re-election laws thus affect efficacy and efficiency of the public sector.

Inappropriate design of transfers

A striking feature of current Mexican transfers is that in many instances they are not designed with efficiency or equity considerations in mind. The criteria behind the allocation of earmarked grants such as *Ramo 33* lies essentially in the amount spent previously in a given category. In contrast, the formula for unconditional transfers through *Ramo 28* although can be improved to further its objectives follows specific allocation criteria (Box 3.1).

Transfers to Mexican municipalities from federal and state levels of government are almost equally divided between earmarked and unconditional transfers. On average around 54% of all transfers to municipalities are done on an unconditional basis and 44% through earmarked funds. Non-earmarked resources are divided into purely unconditional transfers, a municipal fund, as well as concessions on taxation. Purely unconditional transfers chiefly through the General Transfers Fund (*Fondo General de Participaciones*), account for as much as the totality of non-earmarked transfers in the case of the southern and lagging state of Guerrero or as little as 55% in the case of Zacatecas (Figure 3.9). On average, Mexican states receive around three-quarters of non-earmarked resources in the form of pure unconditional transfers.

Yucatán is one of the states with the lower proportion of unconditional transfers in the country just behind Zacatecas and Aguascalientes. Yucatán low own-source revenues coupled with low unconditional transfers suggest that the margin of manoeuvre of the state government is quite limited.

Box 3.1 **An Overview on Transfers**

The reasoning behind fiscal federalism starts by arguing that each level of government should collect its own taxes and examine in what situations this might not be efficient or equitable. Own-tax collection may result in inefficiency when externalities are present in the provision of public goods. Some governments are bound to provide some goods with external benefits or to levy some taxes that have external costs. Transfers can be used to try to correct for these externalities. A second reason for transfers is to equalise tax bases between jurisdictions. This can be justified on efficiency grounds (since equal tax bases remove any pecuniary incentives for migration) and might also be justified on the grounds that certain merit goods such as education should be provided to all. A third reason for transfers is administrative efficiency. This arises if local officials are poorly educated and do not have the necessary skills in tax collection; however, lack of skills can be tackled through training and further education (Oates. 1972; Inman, 1999).

It is important for transfers to be designed in a reasonable way. For instance, matching grants usually are used to correct for externalities since they alter the prices faced by regional governments encouraging expenditures on goods with external benefits. Similarly, matching grants can also be used to offset tax competition that often results in under-provision of public goods. However, the use of grants to correct for externalities presumes that state governments have access to their own revenue sources and are therefore able to change spending decisions in response to a change in relative prices. Since Mexican states have limited ability in this regard, the current Mexican transfer system cannot correct for externalities very effectively.

A second important design feature of a good transfer system is to try to ensure that grant formulas use sensible variables that are relatively exogenous and somewhat isolated from short-term political considerations. For instance, a formula to distribute funds for health might take into account the number of elderly people in a state. This makes economic sense since the elderly normally use health services in a more intensive way, and the state government is likely to view the number of elderly as something that is outside of its control.

Source : OECD (2002) Territorial Review of Mexico

Earmarked transfers to municipalities vary significantly across states in Mexico and the criteria for allocation are not entirely rational. Conditional

transfers to municipalities are basically allocated through two of the seven funds that comprise the Ramo 33, namely the Transfer Funds for Social Infrastructure (FAIS) and the Municipal Strengthening (FAFM). Resources channelled through these two funds yield very important resources in many lagging states such as Veracruz and Oaxaca, but also to states that have been performing better such as Coahuila and Guanajuato or even to large states such as the State of Mexico or Puebla. In contrast, *Ramo 33* funds are not that important in cases like Baja California Sur, Chihuahua, Aguascalientes or Quintana Roo (Figure 3.10). Resource allocation through FAIS is done using a formula that takes into account socio-economic variables such as education, illiteracy, sewage, electricity, housing and income, but also historical distribution.[3] Nonetheless, there are cases of states with richer, more educated population such as Coahuila with large allotments, but also those with a large proportion of population living under poverty and lack of infrastructure such as Chiapas, receiving smaller resources through this fund. One of the explanations for the current pattern of allocation lies in the fact that states are free to decide on the formula for municipal allocation of FAIS resources (Scott, 2004).

Earmarked resources to municipalities are allocated without taking into account policy objectives. On the one hand, FAIS resources are aimed at improving social infrastructure to address gaps in municipal urbanisation, basic health, basic education, housing, rural roads or rural productive infrastructure, as well as in the provision of water, sewage or rural electrification. Although FAIS resources are channelled through the states, in their majority (87.8%) are passed on to municipalities through the Municipal Infrastructure Fund (FISM) and only the remaining 12% (through FISE) stays at the state level (World Bank, 2006). While it is highly desirable that the provision of municipal public goods and services is administered where the needs are, that is, at the local level, many of those public goods have regional externalities that are more suitably managed at the state level. Therefore, a system of transfers should take into account expected externality effects both at the local and regional level, in order to allocate resources more efficiently. In any case, current allocation of resources is far from addressing policy objectives as many states with lagging in terms of infrastructure such as Chiapas, Tlaxcala or Nayarit receive meagre resources through this fund (Figure 3.10).

Figure 3.9 **Non-earmarked Resources to Municipalities from Federal and State Levels**

as percentages of total unconditional transfers

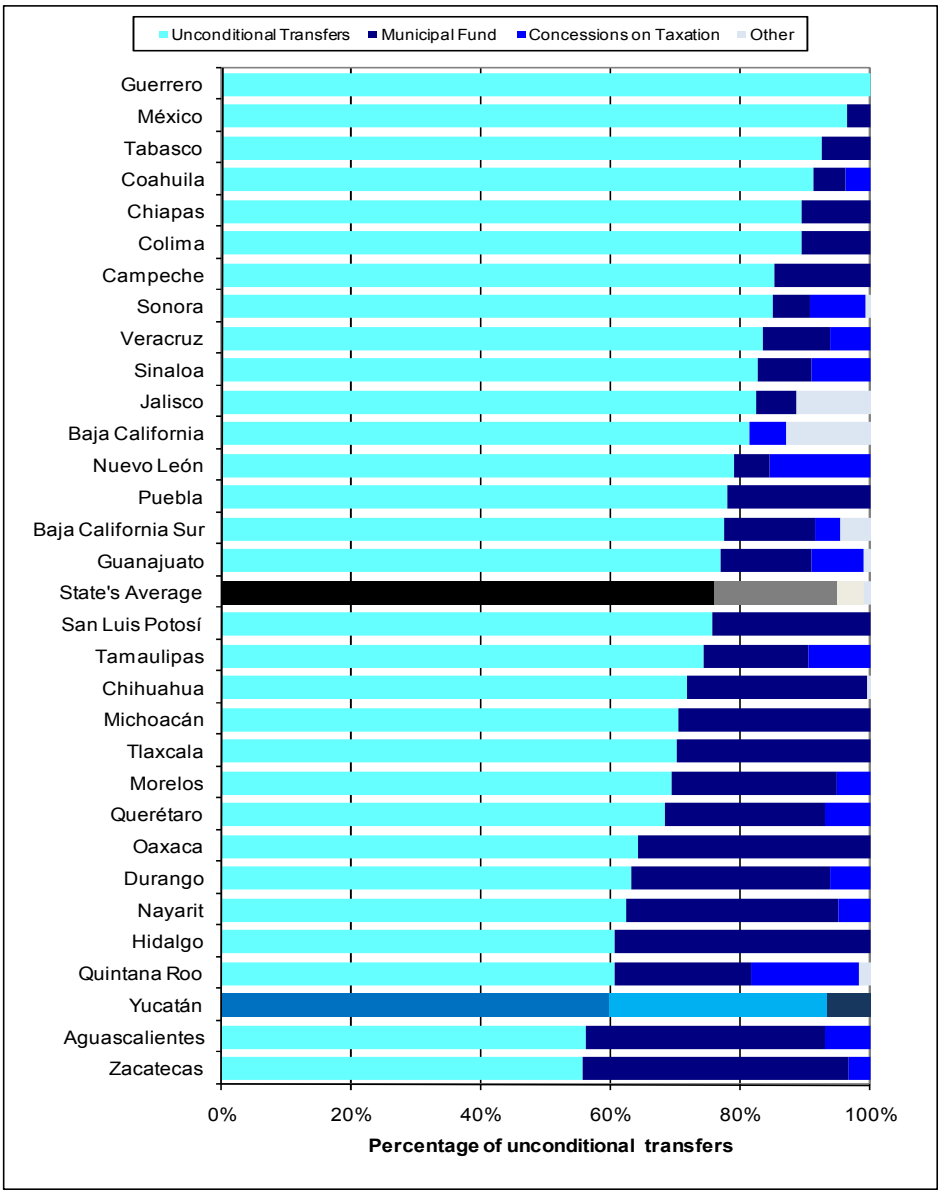


Figure 3.9 Non-earmarked Resources to Municipalities from Federal and State Levels (cont.)

Mexico City (DF) was excluded from the analysis.

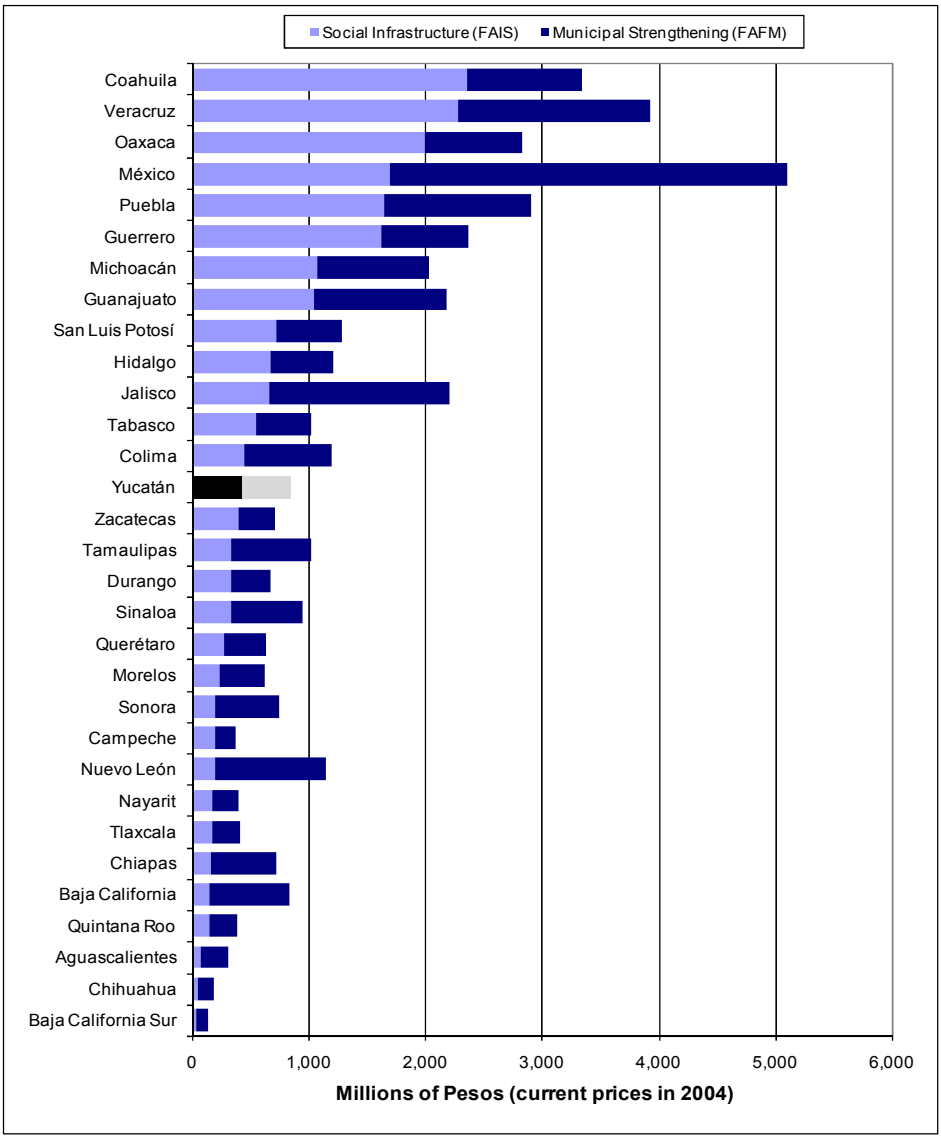
Unconditional transfers (*participaciones*) refers to federal transfers (*participaciones federales*) and the General Transfers Fund (*Fondo General de Participaciones*).

Municipal Fund refers to the Fund for Municipal Fostering (*Fondo para el Fomento Municipal*).

Concessions on taxation refers to federal taxes levied at the state level and also to related sanctions and incentives, including: the vehicle property tax (*impuesto sobre tenencia o uso vehicular*), the tax on new vehicles (*impuesto sobre automóviles nuevos*), the special tax on production and services (*impuesto especial a la producción y servicios*), the federal non-fiscal sanctions (*multas administrativas federales no fiscales*), and the incentives for tax administration (*incentivos por administración de impuestos*).

Source: INEGI (2006) Finanzas Públicas Estatales y Municipales de México 2001-2004

Figure 3.10 **Federal and State Earmarked Transfers (Ramo 33) to Mexican Municipalities (2004)**



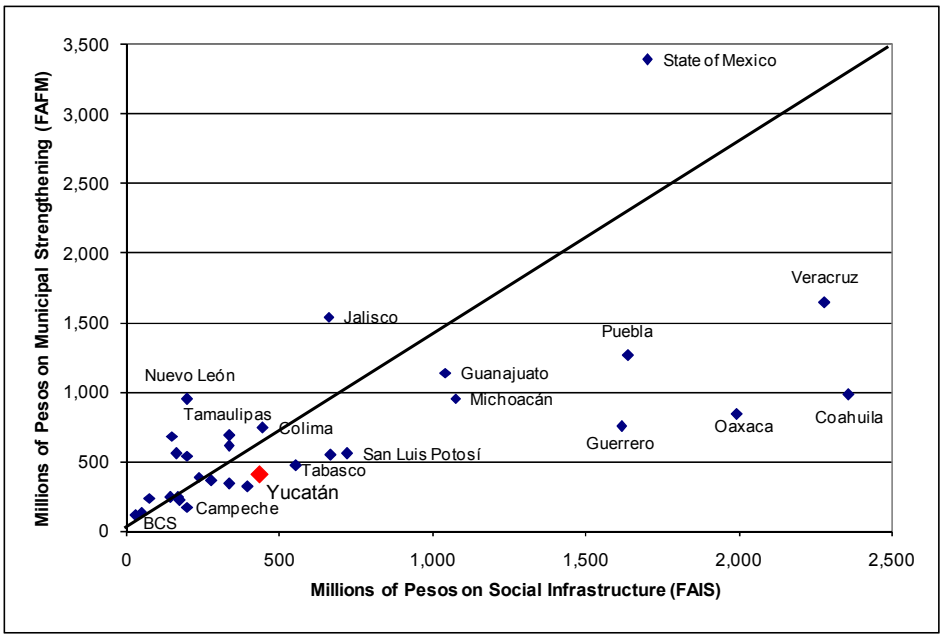
Mexico City (DF) was excluded from the analysis.

Source: INEGI (2006) Finanzas Públicas Estatales y Municipales 2001-2004

On the other hand, municipal strengthening is addressed through FAFM –also known as FORTAMUN- mainly to help municipal governments to cope with financial obligations and to face public security challenges. States receive resources through FORTAMUN and are entirely free to distribute resources among municipalities using their own formulas and criteria (Cámara de Diputados, 2006). The only constraint that the Fiscal Co-ordination Law sets at the national level is for states to transfer money taking into account population size in municipalities. States that have distributed more resources to FORTAMUN are large states such as the State of Mexico, Jalisco or Veracruz (Figure 3.10). Resources to municipalities in Yucatán are comparatively less important than states with smaller populations such as Colima, which raises questions regarding the formulas used to allocate resources through this fund.

Figure 3.11 **The Balance on Transfers to Municipalities**

Funds in Ramo 33 (2004) through FAISM and FORTAMUN



Source: INEGI (2006) Finanzas Públicas Estatales y Municipales 2001-2004

Most of the municipalities in Mexico receive more resources for social infrastructure than they do for public security, but large states have more emphasis placed on the latter. Most states, particularly lagging states such as Oaxaca, Guerrero or Veracruz, receive much more resources allotted to social infrastructure provision than FORTAMUN resources (Figure 3.11). States with large populations such as the State of Mexico, Jalisco or Nuevo León however, receive more resources for public security, probably as the challenges on public security or financial obligations are greater. In any case, FORTAMUN is not intended to strengthen municipalities through local capacity building or through better institutional arrangements for municipal collaboration as the name could suggest.

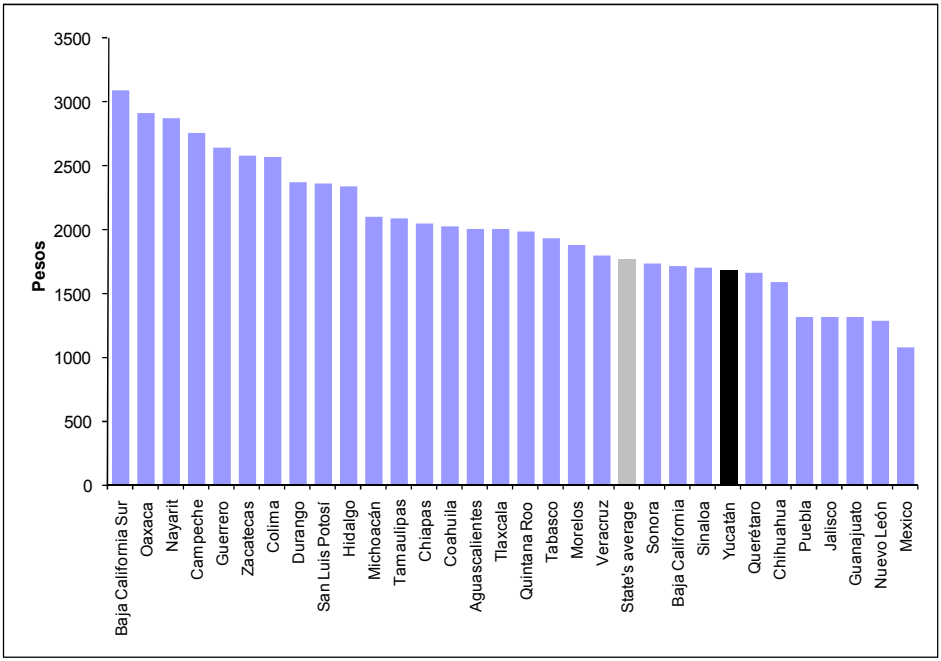
A centralised education system

Despite the decentralisation process, the Mexican education system is still highly centralised. A common curriculum is determined at the national level. Teachers' unions are quite strong and limit the mobility of teachers between different regions of the country. Wages are determined by bargaining at the national level. In contrast to the common curricula and centrally agreed salaries, educational outcomes are very unequal across states and clearly correlated with GDP per capita (see chapter 1, Figure 1.30**)**. Despite the system is still centralised, certain parts of the education system are becoming decentralised. The process of decentralisation of education began in 1992 with the passage of the National Agreement to Modernise Basic Education (Cabrero Mendoza and Martinez-Vazquez, 2000), which resulted in the *FAEB* fund for education to the states. The FAEB is now part of *Ramo 33* transfers.

Earmarked transfers for education show wide disparities across states and no pattern of allocation can be clearly identified**.** The education grant (FAEB) simply transfers to states resources to meet wage commitments negotiated at the central level. Such transfers are not based on criteria such as the number of students in a given state and no equalising mechanism has been put in place to allocate more funds to poorer states. In fact, the State of Mexico, the most populated state in the country, is the state with the lowest per capita resources on education; at the highest end of the table, the state with the smallest population of the country, Baja California Sur, gets three times the resources –in per capita terms- assigned to the State of Mexico. Similarly, the poorer state in the country, Chiapas gets as much per capita transfers for education as northern richer states such as Tamaulipas or Coahuila (Figure 3.12). Yucatán, one of the lagging states in the country is also one of the states receiving the lowest levels of per capita transfers in FAEB, similar to the resources allocated to richer states in the North such as Chihuahua.

Figure 3.12 **Earmarked Transfers to States for Education**

per capita FAEB resources in 2004

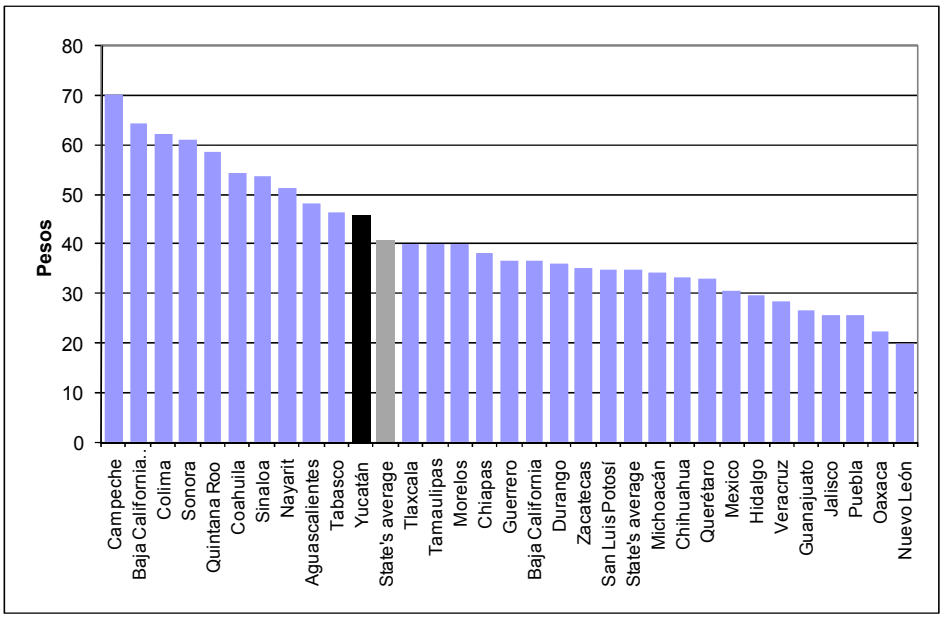


Source: INEGI (2006) Finanzas Públicas Estatales y Municipales 2001-2004

Earmarked transfers for technological education are not allocated with clear policy objectives in mind. Transfers to states carried out through FAETA do not seem to follow equity nor efficiency objectives. A number of lagging states such as Oaxaca, Veracruz or Hidalgo receive lower per capita resources for technological education, but at the same time other poorer regions such as Campeche, Nayarit or Tabasco are among the states receiving greater per capita resources, which evince that equity, cannot be behind the allocation of such resources (Figure 3.13). Yucatán also is among the group of states with greater per capita resources for technological education. Likewise, richer regions with important technology-based industries such as Nuevo León, Querétaro or Chihuahua receive the lowest levels of resources of that kind.

Figure 3.13 **Earmarked Transfers for Technological Education**

per capita transfers to states through the FAETA



Source: INEGI (2006) Finanzas Públicas Estatales y Municipales

The decentralisation of the Mexican education system has not been adequate. The system can neither take advantage of a decentralised system nor does it use its still centralised nature to create a more equal distribution of education funds. Decentralisation gains such as satisfying diverse preferences, improvement in efficiency and educational outcomes from competition are unlikely to be realised since virtually all major decisions are made at the central level. There is no real competition between states or municipalities and no reward is offered to states for providing high-quality schools. FAEB funds are allocated on the basis of *inputs* and most of those expenditures are devoted to teachers instead of on the basis of *output* or outcome such as the quality of education or the number of educated students. Indeed, more federal teachers represent more FAEB funds; in contrast, more funding of state schools implies less FAEB funds. Finally, the decentralisation of spending without decentralisation of revenues limits

accountability as states are not able to decide how much to spend and in what way. In the case of Yucatán, it is one of the states with larger proportions of spending on staff. However, 85% of those resources represent payments to teachers.

The situation may only be improved if the funding of education is thoroughly overhauled. Several elements will need to be put in place. First, the system of education transfers needs to be entirely reformed. This overhaul should include replacement of the current transfers with a formula that is largely equalising in nature. The goal should be to give more transfers per student to poorer states. Second, own-revenue sources should be used as complementary funding for education, and not designed to punish states that use more own resources. This will allow states to spend more on education if desired, while at the same time protecting and encouraging poorer states to catch up.

Governance in Yucatán

The state's public administration was reformed at the beginning of the present *sexenio*. Nowadays, the state executive is comprised of fifteen ministries of which the Ministry of Planning stands out, partly because it has ceased to exist in various other states, but also because it allows focusing on a medium to long-term vision of development. In contrast to the comprehensive view that the Ministry of Planning brings about, the organisation of public administration into a number of ministries related to economic growth and competitiveness – among which the Ministry of Fishing and Rural Development, the Ministry of Industrial and Commercial Development and the Ministry of Tourism – imply a sectoral approach to development. Such an approach seems to make ministries work on parallel rather than in co-ordination as they might have different objectives. Instead, a structure aimed at fostering development and competitiveness would try to integrate these ministries into a single one, or at least, strengthen horizontal co-ordination. Similarly, urban development objectives and efforts are scattered throughout various ministries, but at the same time not linked to environmental, health and education issues. Again, it is necessary to reinforce co-ordination among administrative sectors or downsizing Ministries into themes related to policy objectives rather than sectors.

The size of the administration seems to be in need of an integrating reform, not only to downsize it, but also to foster horizontal co-ordination among ministries. Besides a number of sectoral ministries, there are sixty-four State-owned enterprises, most of them annexed to ministries. Most of these organisms are found in education and, in fact, the administrative body, proportional to population size, is larger than in most states of the country.

For example, the centralised administrative body is comprised of 7 685 workers – not counting the education sector- which implies a total of 4.63 public employees for every thousand inhabitants, contrasting with the state of Colima which employs 3.25 (see annex). Not surprisingly and in spite of the education sector, Yucatán was found earlier to be one of the states with larger expenditures on staff (see Figure 3.7).

The legal framework of state revenue is not only adequate, but also reinforced by the Federal Legal Framework. The existing laws are adequate and comprise most administrative aspects and most of them have appropriate updates. Laws enacted at the federal level complement the state legal framework as in the case of the Information Access Law that enacted in 2004, is a foil for the fiscal control of state finances (Table 3.1).

Table 3.1 **Legal Framework of State Finance**

Laws	Year of Last Reform
Organic Law of the State	2005
State's Finance Law (*Ley de Hacienda del Estado*)	2005
Law of Access to Public Information	2004
Fiscal Co-ordination Law	2001
Municipal Finance Law (*Ley de Hacienda Municipal*)	2000
State's Fiscal Code (*Código Fiscal del Estado*)	1998
State's Property Law (*Ley de Catastro del Estado*)	1998
Municipal Organic Law	1996
State's Public Debt Law	1996

Yucatán's municipalities have recently developed their legal framework, but in most aspects lags behind the average municipality in the country. The level of progress in municipal regulation shows, in a sense, the 'institutional infrastructure' for local governments. Although the existence of such regulations does not guarantee their enforcement, it is without a doubt, a first step towards improving municipalities' operation and performance in Yucatán. In most cases, the percentage of municipalities in the state of Yucatán is lower than in the country. However, the notable and relevant exception is Municipal Development Plan, whereas more than three-quarters of municipalities in the state have a bylaw to produce the most important local planning document, in Mexico the average lies at just over one-quarter (Figure 3.14). Other exceptions can also be found in civil protection, civic justice, as well as transit and transport. In contrast, the most significant shortcomings are in good government, internal bylaw for local government

(*Ayuntamiento*), public works, public administration, zoning and land-use, as well as citizen participation.

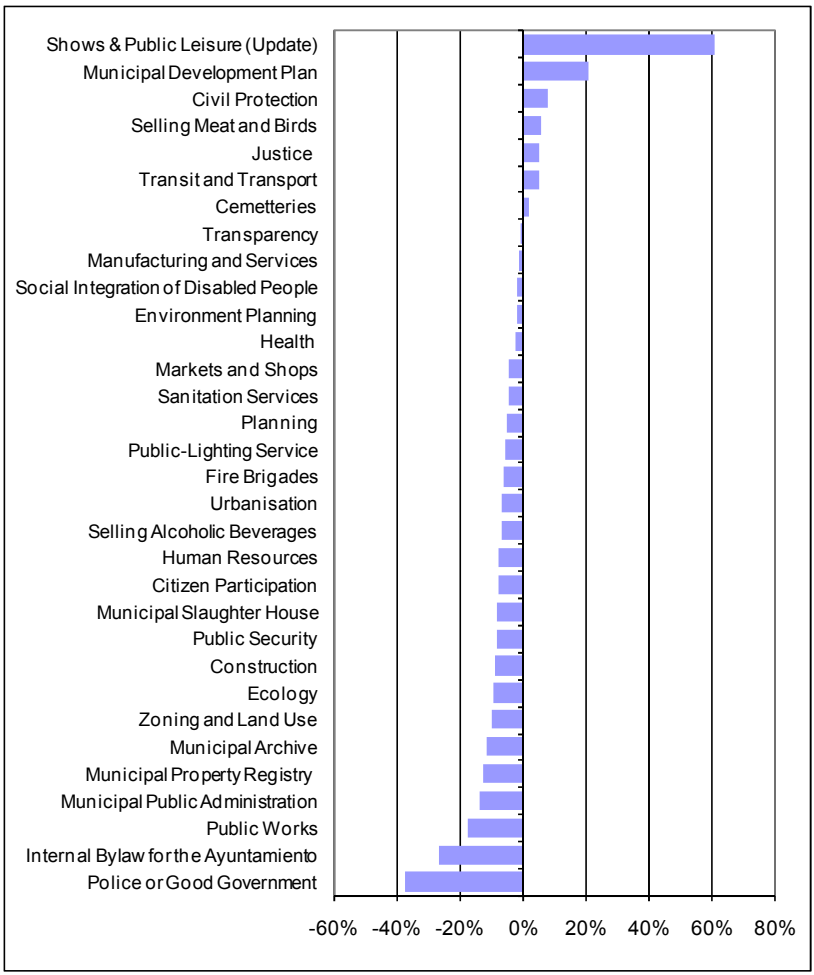
Deficient or non-existing regulations in Yucatán's municipalities, particularly those referring to administrative order, land-use, public works or citizen participation represent major obstacles for development and competitiveness. Appropriate regulation allows for clear rules, not only for individuals and organisations interacting with local governments, but also for productive investment wishing to locate in a given community.

Financing Development in the State

In terms of public finance, Yucatán not only shows greater dependency on federal transfers and less tax autonomy than the average state, but also a rising public debt. The state's main source of income stems from federal transfers –both conditional and unconditional- representing over 90% of total revenue (Figure 3.4). Own-source revenues are very limited in the state as in many other Mexican states. Moreover, fiscal dependency of the state is even greater than the state's average. Yucatán has also seen an accelerated rise in the state's public debt. Between 1993 and 2006, Yucatán's public debt grew at an average annual rate of 7.7% (Figure 3.14). However, both the level and growth of public debt in Yucatán is one of the lowest among Mexican states (Figure 3.15). Therefore, following the relatively new possibility of Mexican states to rate the quality of their debt; many Mexican states have seized the opportunity to finance development through public debt. In particular motorway projects have been partially funded by independent bond issuing such as in the cases of Chihuahua and Nuevo León.

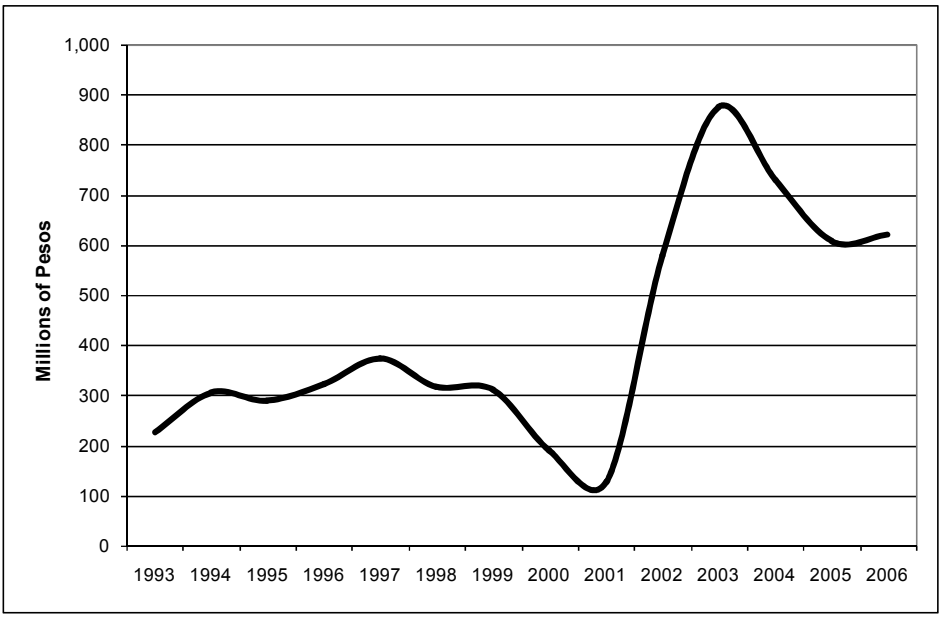
Figure 3.14 **Institutional Infrastructure in Yucatán's Municipalities**

Municipalities in Yucatán that have bylaws or updates compared to the national average of municipalities



Source: SEDESOL (2002) Encuestas a Presidentes Municipales 2002

Figure 3.15 **Evolution of Yucatán's Public Debt Balance**

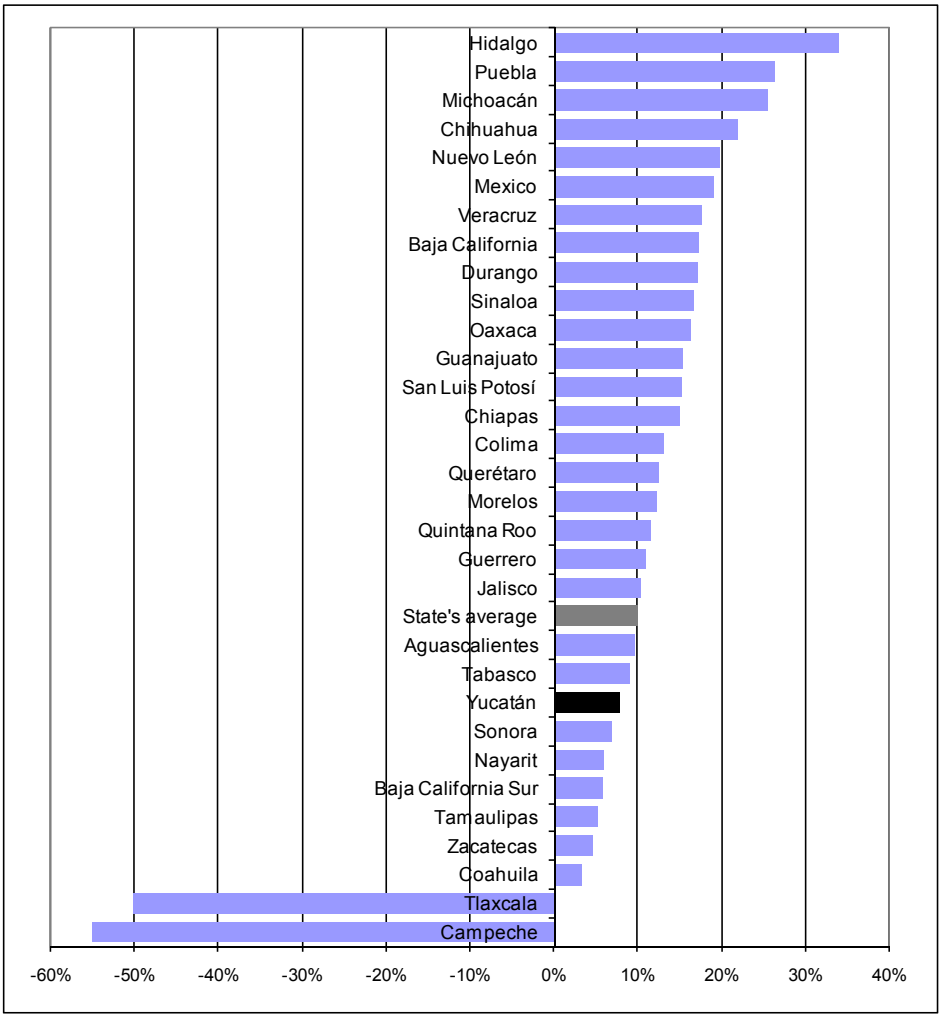


Balance of public debt as a proportion of GDP also yielded the same results, but state GDP is only available until 2004.

Source: INDETEC (2007) Saldo de la Deuda de Estados y Municipios a finales de 2006

Figure 3.16 **Public Debt Growth Across Mexican States**

Average Annual Growth Rates (1993-2006)



Source: INDETEC (2007) Saldo de la Deuda de Estados y Municipios a finales de 2006

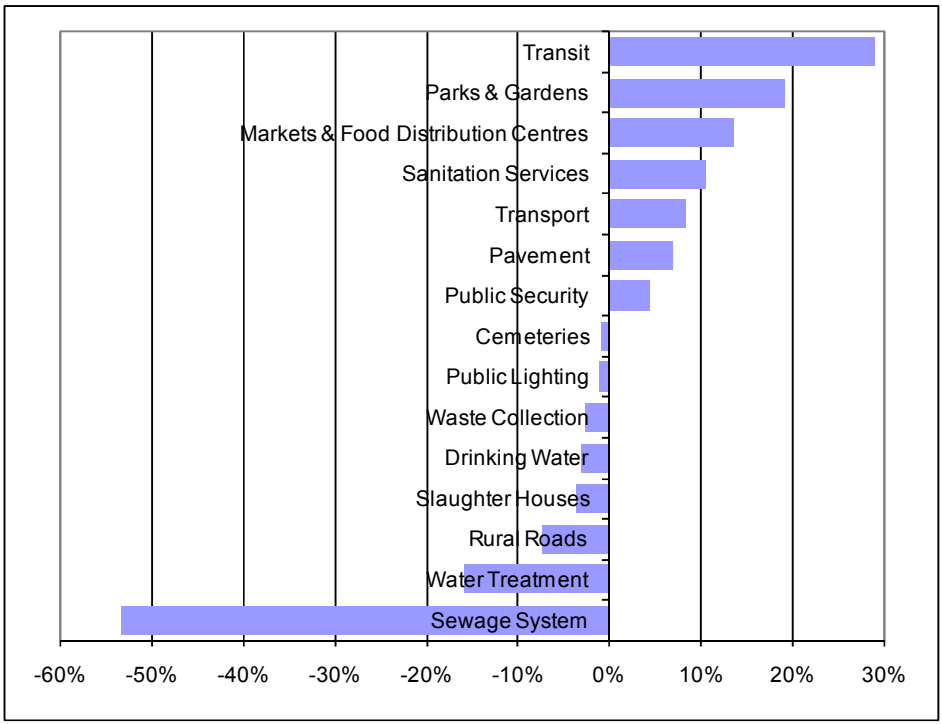
Municipal Association and Local Public Service Deliverance

One of the main activities of any local government is the provision of public services. On the one hand, local governments are closer to citizens' needs and better suited to respond accordingly than any other level of government. On the other hand, public services have a directly influence on a community's level of competitiveness; those that offer a wider range and better quality may rip the benefits of new investments.

Although Yucatán provides a number of public services locally, an important number of services remain underprovided in the state. While more municipalities in Yucatán than in the national average, deliver important services such as transit, transport or public security, crucial services such as sewage, water (treatment and drinking), waste collection or rural roads are provided in less municipalities than in the country. Less than 5% of municipalities in Yucatán provide water treatment, but on average 20% of municipalities do (Figure 3.16). Less than 10% of the 106 municipalities in Yucatán provide sewage system compared to almost two-thirds nationally. Only 57% of municipalities in the state provide rural roads, around 8% less than nationally. Four out of five municipalities in the state deliver drinking water, slightly less than the national average (83%). Similarly waste collection is carried out locally by three-quarters of municipalities in the state, only 3% less than the national average. The services that exhibit the greatest pressure in Yucatán's municipalities are concentrated in sewer systems and the treatment of residual waters.

Figure 3.17 **Public Service Provision in Yucatán's Municipalities**

Percentage difference between Yucatán's municipalities and the national average



Source: SEDESOL (2002) Encuestas a Presidentes Municipales 2002

Although the proportions may differ, local public services in Yucatán are the same provided in the rest of the country. However, municipalities in Yucatán could deliver some of them by other means. In particular, the association among municipalities to join efforts to provide services can be a solution that maximises the use of resources and delivers services where they are currently not provided. Municipal association however, is unusual in Mexico and Yucatán is no exception.

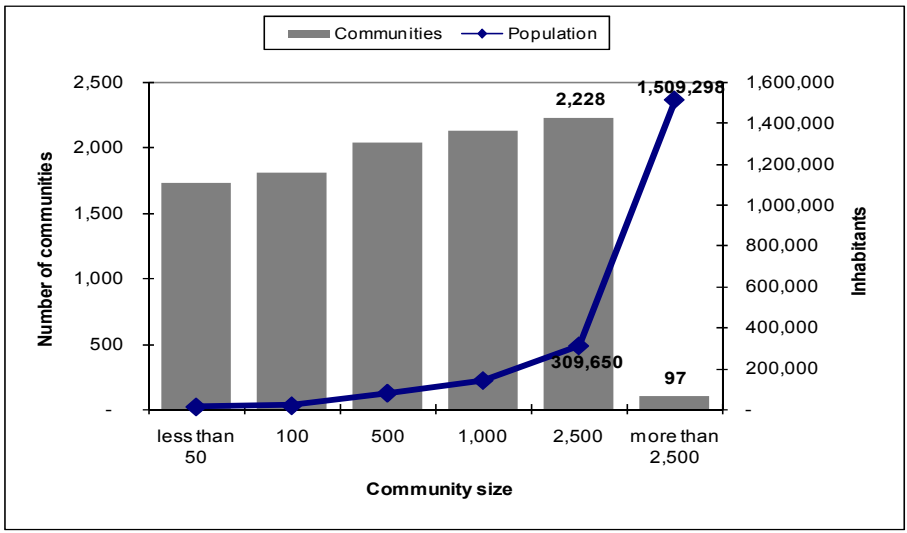
Yucatán also lags behind in using technology to manage the provision of services. Counting on adequate computer infrastructure to capture, manage and present information in municipalities has become a must for optimising administrative processes, tax revenues and public finances. Yucatán's municipalities stand far below the national average of almost 22 computers for each municipal government with only 4.55 computers. Again,

association may prove to be the key to pooling resources for more efficient service delivery.

Administrative Fragmentation and Population Dispersion

Municipal association in Yucatán may not only be more efficient, but perhaps the only way for small communities to receive public services. Yucatán has 106 municipalities and 2 325 communities with a total population of some 1.8 million people. Three-quarters of all communities in Yucatán have less than 50 inhabitants and 96% less than 2 500 (Figure 3.17). However, only 17% of Yucatán's population lives in communities of less than 2 500 people. In contrast, 4% of all Yucatán's communities represent 83% of total population in the state. With such numbers of communities and municipalities, and in particular, the dispersion of the former into small population centres, the idea of providing incentives for municipal association may be in many cases the only solution, particularly with the aforementioned low levels of fiscal autonomy in the state.

Figure 3.18 **Concentration of Population and Community Dispersion in Yucatán**



Source: INEGI (2005) Conteo Nacional de Población 2005.

Box 3.2 **Restructuring of Local Government and Services in Finland**

Finland is engaged in an ambitious local-government restructure aiming at merging municipalities or incorporating parts of some municipalities into some others on the basis of service structures. Such a restructuring process seeks to assemble larger catchment area for those services for which the population base in individual municipalities is insufficient. In addition, the scheme also takes into account increased levels of co-operation among municipalities.

Objective

The objective is to strengthen municipal and service structures on the basis of local democracy; to improve the manner in which services are produced and organised; to overhaul local government financing and the system of central government transfers to local government, and to review the manner in which tasks are divided between central and local government. The aim is to improve productivity, slow down the growth in local level expenditure and create a sound basis for steering the services organised by municipalities.

The Act entered into effect at the start of 2007 and until 2012. The new boundaries will be applied as of 2008 onwards. During 2009, the Government will submit a report to Parliament on how the objectives laid down in the reform have been met.

Conditions to be met

Mergers of municipalities are undertaken voluntarily, but municipalities will have to comply with the following requirements: 1) A municipality or partnership area responsible for primary health care and clearly associated social services should have a population of about 20 000 at least; 2) A municipality or a partnership area authorised to provide vocational basic education, should have a population of about 50 000 at least. Municipalities should take measures to meet these population requirements through the rewarding of municipal boundaries and by setting up municipal partnership areas. Municipal division should also be based on the requirement that a municipality constitutes a commuting area or some other larger catchment area that has the necessary prerequisites in terms of economic and personnel resources for assuming responsibility for organising and financing the services.

Productivity should also be improved by making the organisation of municipal services more efficient for built-up regions with problematic urban structures. The four largest and strategically placed cities of Espoo, Helsinki, Kauniainen, and Vantaa, should prepare a plan sketching out better ways to reconcile land-use, housing, and transportation and on how to make better use of services in the region across municipal boundaries.

Box 3.2 **Restructuring of Local Government and Services in Finland** *(cont.)*

On the other hand, the framework would lay down a procedure in which central government and a municipality in a particular difficult financial situation (commonly rural areas) would jointly examine how the municipality in question

would be able to ensure the provision of statutory services for its residents and make provisions on the obligations of central government and the municipality to use the findings as a basis for measure intended to ensure the prerequisites for these services.

Incentives to merge

The municipal tax revenue base would be strengthened by transferring certain tax deductions from municipal to state taxation and by ensuring that the system of local government financing does not discourage municipal mergers and cooperation. The aim is to merge all central government transfers earmarked for specific administrative branches. Additionally, some organising and financing responsibilities will be transferred to the central government.

The structure and size of the merger grants would be defined so as to encourage a large number of municipalities to merge into municipalities with populations that are substantially higher than at present. The merger grants would depend on the total population of the resulting municipality, the population of the municipalities involved (excluding the most populous one) and the number of municipalities involved. Earlier mergers will receive more benefits than later ones. The merger grant will be payable for three years.

Source: Government proposal to Parliament for an Act on Restructuring Local Government and Services and for Acts amending the Act on Local Authority Boundaries and the Asset Transfer Act.

Municipal association is legally possible in Mexico since 1999; however, this possibility has not been widely used in the country whether to optimise the use of resources or to generate new infrastructure. One of the reasons for the lack of association lies in the fact that municipalities differ widely in institutional development, thereby making the association between large and small, rich and poor municipalities unachievable as mutual benefits schemes are rather uncommon. However, OECD experience shows that besides common objectives and provision of services, successful structures not only take into account co-ordination among levels of government and across communities, but also incorporate other actors such as civil society, labour unions and businesses (Box 3.3).

Paradoxically, where needs and benefits are common by way of proximity, as it is at the metropolitan level, legal impediments prevent metropolitan governments from being established. Mérida has not been an exception as metropolitan co-ordination has not been possible among unequal partners. However, the formulas to achieve metropolitan co-operation usually employ elected bodies, separation of powers among officials, co-funding from different government levels, and a strong orientation towards regional planning, transport infrastructure, as well as urban sprawl and land-use (Box 3.4).

Box 3.3 Co-ordination among French Regions : The Experience of the Pays du Centre Ouest Bretagne

Bretagne is one of France's 22 regions and is comprised by 4 departments and 108 communes. The Centre Ouest is an inter-departmental region within Bretagne that spreads throughout 3 200 kms^2, and hosts a population of some 103 000 inhabitants of which 8 000 in Carhaix the most important urban centre. The region is predominantly rural and half of its active population is employed in activities related to agriculture, 20% of them directly in farming, 10% in agro-industry and 20% in related services such as transport. As the region comprises a number of communities and departments, the region was created to seize the French initiative for inter-communal structures in 1992 to co-ordinate inter-departmental efforts and seize a number of regional, national and European actions for development. The current structure as *Pays Centre Ouest Breatgne* was transformed in 1998 to pursue regional sustainable development co-ordinating elected officials, government officials, businessmen and union leaders in issues related to firm development, organisation of public services, valorise local resources and strengthen territorial cohesion.

The region faces a number of challenges common to rural areas. First, due to lack of opportunities outside agriculture, many young people migrate to other regions taking with them their human capital. As Bretagne has one of the best schooling performances in France, migration is usually a brain drain. However, for many parents, migration is a measure of their kids' success. In fact, the parents are who frequently, put pressure on their offspring to get good grades and then migrate as they perceive no opportunities in the region.

Second, water pollution in the region was originally raised as an issue by environmental organisations, but quickly followed by the population and the media for the implications on tourism and the production of oysters in the coast. Although the problem took considerable time and legal resources, the issue has been resolved by a piece of legislation that prevents intensive farming from taking place in the region. Legislation restricts the density of production measured by the number of animals (pork) by square meter and the limits have also set sanctions for exceeded levels of animal waste.

Box 3.4 **Metropolitan Association in Germany, the UK and the USA**

The Stuttgart metropolitan area in Baden-Württemberg comprises 179 municipalities and five counties with a population of around 2.6 million people and a surface of approximately 3.6 thousand squared kilometers. In order to address regional spatial planning, transport infrastructure and operation, and regional economic development, the **Stuttgart Regional Association** was established through a provincial law in Germany and assembled by direct election through a general ballot.

The association is funded by municipal contributions (54%) and intergovernmental conditional grants from the region of Baden-Württemberg (46%). The municipal funds consist of a general contribution (11%) and an earmarked contribution for public transport (35%).

Both contributions are negotiated annually and then split between the municipalities according to tax raising capacity and structural factors. The association has no taxing power and does not levy user fees. These powers remain within the exclusive authority of either the municipalities or the region. Most expenditure (85% of the associations' budget of around 260 million euros) goes to funding regional express trains and the regional transport body that manages buses and tramways.

After the Greater London Council was abolished in 1986, a new Greater London Authority (GLA) was established in 2000. Unlike any previous local or regional government in the UK, it is made up of a directly elected Mayor – the Mayor of London who is elected by a single constituency of 7.3 million people – and a separately elected Assembly – the London Assembly. When fully staffed, there will be about 490 staff to help the Mayor and Assembly in their duties.

There is a clear separation of powers within the GLA between the Mayor, whose executive role requires making decisions on behalf of the GLA, and the Assembly which has a scrutiny role and is responsible for appointing GLA staff. The Mayor is London's spokesman and leads the preparation of statutory strategies on transport, spatial development, economic development and the environment. S/he also sets budgets for the GLA, Transport for London, the London Development Agency, the Metropolitan Police and London's fire services. The Assembly scrutinises the Mayor's activities, questioning the Mayor about her/his decisions. The Assembly is also able to investigate other issues of importance to Londoners, publish its findings and recommendations and make proposals to the Mayor.

The GLA's competencies include a number of existing government programmes such as police, fire, transport and economic development. These four key functional responsibilities are in the hands of boards: Metropolitan Police Authority, London Fire and Emergency Planning Authority, Transport for London and London Development Agency. Other functions include environment, culture, media and sport, public health and inward investment. The GLA has no

Box 3.4 **Metropolitan Association in Germany, the UK and the USA (*cont.*)**

taxing power. Its budget amounted to 4.7 billion pounds in 2002-2003, and most of the cost of the GLA itself is met by a central government grant, with a small contribution from London council taxpayers.

The Metropolitan Service District, usually known as Metro Portland, is a government for the Portland Metropolitan Area in Oregon and the only directly elected regional government in the USA. Metro serves more than 1.3 million residents in Clackamas, Multnomah and Washington counties, and the 25 cities in the Portland metropolitan area. Metro started operations in 1979 and has been since then, responsible for containing urban sprawl, ensuring the availability of land for urban development, planning the regional transportation system, as well as managing parks, waste disposal, landfills and recycling transfer stations. It is governed by a Council President elected region-wide and six commissioners who are elected by district and has also an elected auditor for the entire region. Each elected official serves a four-year term. The council appoints a chief operating officer and an attorney. Metro receives 14% of its 200 million USD budget by levying a property tax, but more than 50% of its budget comes from fees and charges levied on metropolitan-wide operated firms (solid-waste disposal plan, the zoo, the Convention Center, the Expo Center and the Portland Center for art performances).

Source : OECD (2006e) Competitive Cities in the World Economy

Even among municipalities with similar institutional infrastructure in rural areas, association has also not been common, partly due to lack of collaborative culture, but also given the negligible infrastructure to support associations. One-fifth of all municipalities have used some sort of association to provide services, the bulk of which have been to deliver drinking water (29%), public security (28%) or waste collection (11%). Association is even smaller if marginalised municipalities with lower capacities to provide services are taken into account. Only 13% of highly marginalised municipalities have participated in some kind of association (SEDESOL, 2002). OECD experiences also show that successful associations entail a shared strategic vision or the creation of a regional fund (Box 3.5).

Municipal association in Mexico has not only been limited, but part of it informal. In spite the vast majority of the association schemes had either an approval from the *ayuntamiento* (City Council) or from the State Congress (which is legally necessary when municipalities of different states are being

associated), 28% of the agreements are informal (SEDESOL, 2002). The implication of it is that neither an accountability process nor responsibility for the proper delivery of services is in place.

Box 3.5 **Inter-municipal bodies in Canada and France**

In Montreal, the amalgamation of the municipalities gave birth to the New City of Montreal, whose boundaries still not fully match the functional area (defined through commuting and firm linkages). Thus, a new regional body called the **Montreal Metropolitan Community** (CMM) was created by the government of Quebec in 2000 to handle responsibilities in areas of spatial planning, economic development, housing and transport, environment and waste disposal (OECD, 2004). The CMM has a planning and co-ordinating role with executive functions left to lower tiers. It is funded by the member municipalities (75%) and the provinces (25%) and is managed by a Board of Directors represented by the mayors of the several municipalities in the Montreal Metropolitan Region. Member municipalities have agreed to share half of the increase in total municipal property tax revenue with the CMM, which has also the possibility to impose tipping fees on new development of property. The CMM has been particularly active in promoting an economic development strategy for the whole metropolitan area, including the creation of a regional fund, the production of a strategic vision and the elaboration of a cluster strategy, as well as lobbying with higher levels of government for funding of municipal infrastructure.

Canada's **Greater Vancouver Regional District** (GVRD) is a voluntary organisation that has achieved striking success in the Vancouver metropolitan region to deal with such challenges as rapid growth, underinvestment in infrastructure. The GVRD is a partnership of over 20 municipalities comprising the Greater Vancouver metropolitan area which has formal responsibility for providing metropolitan-wide services such as drinking water, sewage, water treatment, recycling and waste disposal, as well as regional planning and environmental protection. The GVRD's Board of Directors is comprised by mayors and councilors serving on members' local councils each representating municipalities on a population basis. The largest expenditures of the GVRD are for water and sewers (42% of total expenditures in 2002), capital expenditures (23%), and solid waste management (16%). User fees account for 80% of GVRD revenues followed by property taxes (almost 8%), and other investment income (almost 5%). However, a separate regional authority is responsible for transit.

Municipal organisation in France is characterised by fragmentation which has led municipalities to develop pools of certain services. This form of collaboration has always been practised in France on a voluntary basis and is regarded by some as an effective alternative to grouping local authorities (Mévellec, 2002). In the late 1990s the government decided to recognise the concept of agglomeration to clarify the institutional framework and accommodate the proliferation of agreements and actors. With the introduction of three laws (law on spatial

Box 3.5 **Inter-municipal bodies in Canada and France *(cont.)***

planning and sustainable development or LOADDT, law on strengthening and

simplifying inter-municipal co-operation, and law on urban solidarity and development or SRU), the government developed a mechanism to encourage the creation of Agglomeration Community (a public inter-municipal co-operation body for urban areas of over 50 000 inhabitants grouped around a central city with at least 15 000 inhabitants) and the Urban Community (a public inter-municipal cooperation institution for urban areas with over 500,000 inhabitants). As of 2005, there were 143 Agglomeration Communities and 14 Urban Communities. These inter-municipal bodies are directed by councils incorporating representative municipalities and carry out spatial planning, economic development, public transport, environment, social housing, waste disposal, among others. Typically, the President of the board is the Mayor of the central city. To carry out most of their responsibilities, these authorities enjoy their own tax revenues from the establishment of a common business tax.

Source : OECD (2006e) Competitive Cities in the Global Economy

Capacity Building

There is no adequate balance between local capacities and increasing responsibilities in Mexico. On the one hand, increasing resources and responsibilities should arguably be given to state and municipal governments to rip the benefits of federalism. On the other hand, it can also be argued that employees in sub-national governments have limited capabilities to handle greater resources and capacities. However, state and municipal realities in Mexico widely vary and not all states or municipalities are ready for a rapid resource decentralisation, nor are they all in the same state of institutional and administrative fragility (Cabrero, 2004).

Mexico has close to 2 500 municipalities, which exhibit wide differences. They range from small towns with little formal education and weak accounting practices to big cities with several million inhabitants, highly educated policymakers and computerised systems of fiscal accounts. There is a need to take into account these differences in the context of decentralisation. The Mexican government has taken important, yet insufficient steps to strengthen state and municipal governments by taking into consideration the need for institutional development and training of public servants through the Programme for Authentic Federalism, co-ordinated by the Centre for Municipal Development (CEDEMUN).

Although there is no information to evaluate capacities at the state level, the municipal level shows low capacities to respond to citizen's demands and cope with new responsibilities brought about by decentralisation. The profile of municipal civil servants in Yucatán is below the national average, both in terms of technical background, as in previous experience in relevant fields. Almost one-half of municipal employees in Yucatán have up to 9 years of schooling (*secundaria* in Mexico, equivalent to H9 *freshman* in the USA or *troisième* in France), but only 28% holds a bachelor's degree. In contrast, for the average municipality in the country, 53% of its personnel have a university degree. Regarding the area of public finance, 28% of Yucatán's municipal treasurers have a Bachelor's degree, while in the average municipality in the country more than have of the treasurers hold the same level of studies.

Due to legal restrictions on re-elections and the short period of local governments, municipal administrations are renewed almost entirely every three years. The problem of drained capacities is even more acute in Yucatán's municipalities than in the typical municipality. In Yucatán, 83% of municipal employees had no previous experience in the public sector, a figure that is even higher than the Mexican municipal average at 63% (Table 3.2). In certain states there is an ongoing effort to enact laws and norms through their local Congresses for the professional certification of municipal civil servants. This is something that Yucatán should take into account in order to improve the low levels of experience through the training of their local employees.

Table 3.2 **Previous Employment for Civil Servants in Yucatán and the Country**

Previous Employment	Municipalities of Yucatán %	National Average of Municipalities %
Election Post	1	0.87
Political Party	1	1.64
Private Sector	9	11.17
First Job	8	5.09
State Government	6	11.19
Federal Government	6	7.45
Municipal Government	4	18.06
Independent	51	27.29
Own business	13	17.24

Source: SEDESOL (2002) Encuestas a Presidentes Municipales 2002

Training has emerged as an improvement mechanism to improve capacities in municipal administrations, but greater involvement from other levels of government and academic institutions is needed. In an average

Mexican municipality, the main source of training has been the state government, providing training to almost 90% of municipalities (Table 3.3). In contrast, the leading role in training in Yucatán has been played by NGOs providing training to 91% of municipalities in the state. However, the state government has also been playing an important part in training of municipal officers providing services to more than three-quarters of local governments in the state. If the state government has not been as active in Yucatán as in the rest of the country, the federal level has been paying more attention to Yucatán than on the average municipality. It is important to highlight that academic institutions have only trained a small number of municipalities in the state, a condition that is similar to the national average. It is important to further training in municipalities in Yucatán through greater participation of the state government, but also the federal government and academic institutions, both of which have only reached a minority of municipalities in the state.

Table 3.3 **Training in Municipalities in Yucatán and the Country**

Training or advise received by:	Municipalities of Yucatán %		National Average of Municipalities %	
	Yes	No	Yes	No
Government Offices, NGOs or private institutions	19	81	77.1	21.3
Federal Government	37	63	33.9	65.7
State Government	76	24	89.6	10.1
Academic Institutions	11	89	9.4	90.3
Municipal Associations	6	94	8.3	91.3
NGOs	91	9	8	91.6

Source: SEDESOL (2002) Encuestas a Presidentes Municipales 2002

In order to correct governance shortcomings in the short-term, training of municipal civil servants should be high on the agenda. This effort would be reinforced with the enactment of reforms at the local congress that would establish a certain criteria and conditions for creating a truly professional civil servant body alongside a certification system, such as already exist in other states in the country. In addition, the state government needs to channel resources to strengthen and modernise both the physical and administrative infrastructures of state municipalities.

Social Participation for Social Cohesion

Citizen participation in local arenas plays a role of outmost importance in two ways. On the one hand, it is a way for the citizenry to better organise themselves in order to express their needs and defend their interests. On the other hand, it promotes a more transparent management of resources since constant public scrutiny make acts of corruption and mismanagement far more difficult.

Yucatecáns prefer to participate through a myriad of organisations that range from professional to religious and rely much less on mechanisms set up by the public administration. In contrast to the average of municipalities, those in the state use traditional organisations (88), non-for profit (87), professional (81), religious (79) or neighbourhood organisations (59) much more than the average municipality (Table 3.4). In contrast, government structures such as the COPLADEMUN or the Municipal Development Council are much less used in Yucatán than in the country average.

It is perhaps in fostering social participation that new governance schemes may arise in Yucatán. The state has a high turnout in electoral matters, low levels of public insecurity and a general climate of social order, which can represent a real factor of change for the state. Strengthening social capital would have a positive influence for development and in the medium-to-long-term such a capacity for social organisation could create a better climate for governance in the state.

Institutional Capability for Transparency and Information Access

In spite citizen participation in Yucatán is notable mainly through civil society's bodies, transparency organisms in municipalities of the state are not very common. Transparency bodies through which the citizenry can stay informed about relevant aspects of municipal administration are of paramount importance in order to give society's assurance that its voice is not only being heard, but also are informed about corresponding changes. In the case of Yucatán, the presence of transparency bodies at the municipal level is marginal; only a handful of municipalities have bodies of such nature (Table 3.5). In fact, their presence is smaller compared to the average of Mexican municipalities in all areas. It is also important to highlight that no citizen participation on evaluation mechanism has been set up in Yucatán nor in any Mexican municipalities. Therefore, the possible accountability that governments may be faced with is reduced with the exclusion of society from the evaluation procedure. In fact, the lack of overall transparency and in particular on evaluation may be part of the explanation for Yucatecan's preference for civil society's organisations when it comes to participation.

Table 3.4 **Forms of Participation**

Preferred Participation Way		Yes	No	Don't Know
COPLADEMUN	Municipalities in Yucatán	20	68	12
	National Average of Municipalities	44	39	17
Municipal Development Council	Municipalities in Yucatán	17	71	13
	National Average of Municipalities	38	45	17
Citizen Council	Municipalities in Yucatán	41	47	14
	National Average of Municipalities	24	59	17
Neigbourhood Organisations	Municipalities in Yucatán	58	30	15
	National Average of Municipalities	17	66	17
Traditional Organisation	Municipalities in Yucatán	88	0	16
	National Average of Municipalities	7	76	17
Professional Organisations	Municipalities in Yucatán	81	7	17
	National Average of Municipalities	2	81	17
Religious Organisations	Municipalities in Yucatán	79	8	18
	National Average of Municipalities	1	82	17
Non-for-profit Organisations	Municipalities in Yucatán	87	1	19
	National Average of Municipalities	2	81	17
Other	Municipalities in Yucatán	88	0	20
	National Average of Municipalities	4	79	17

Source: SEDESOL (2002) Encuestas a Presidentes Municipales 2002

Table 3.5 **Mechanisms of Transparency**

Mechanism of Transparancy		Yes	No	Don't Know
Publication of Financial Statements	Municipalities in Yucatán	8	90	2
	National Average of Municipalities	12	85	3
Citizen Participation in Evaluation	Municipalities in Yucatán	0	98	2
	National Average of Municipalities	0	97	3
Cabildo Open Sessions	Municipalities in Yucatán	5	93	2
	National Average of Municipalities	8	88	3
Information Bulletins	Municipalities in Yucatán	6	92	3
	National Average of Municipalities	9	87	3
Public Address	Municipalities in Yucatán	8	90	4
	National Average of Municipalities	10	87	3
Other	Municipalities in Yucatán	8	90	5
	National Average of Municipalities	11	85	3

Source : SEDESOL (2002) Encuestas a Presidentes Municipales 2002

Co-operation for Competitiveness

Inter-governmental co-operation at the *municipio* level in Yucatán confronts several serious challenges. Major concerns include a lack of fiscal autonomy, a need for legislative and regulatory reform, and lack of horizontal and vertical co-ordination among political units. In addition, collaboration is impeded by a number of cultural and institutional factors, including lack of long-term strategic planning, inefficient municipal organisation (too many *municipios*), and a lack of planning tools for decision-making and evaluation.

Notwithstanding these constraints, municipal governments in Yucatán must address a host of social, economic and environmental issues that will threaten the region's primary comparative advantage –quality of life– in the coming years: waste management, sewage and water treatment, and public transportation. Perhaps the most viable form of inter-governmental co-

operation in the short-term is at the metropolitan level, where the city of Mérida has the financial resources and infrastructure to assist neighbouring municipalities in resolving "costly" environmental problems that cross *municipio* borders, such as solid waste collection and disposal and water contamination. Ultimately, it would make sense for municipal governments in the Mérida metropolitan region to follow a "regional planning council" approach to address these and other trans-boundary issues.

The lack of vertical and horizontal co-operation in Yucatán is due to rigid legislative and regulatory frameworks. However, many existing state and municipal policy measures replicate this inflexibility. To the extent possible, policymakers should use state government resources to break this cycle of inflexibility, providing financial incentives to encourage co-ordination and collaboration among municipalities on the trans-boundary issues identified above. One possible strategy, used successfully in New Zealand, requires two or more municipalities to work together on a shared project in order to obtain government funding. Scale policy measures and responses in this fashion promotes co-operation and is flexible, since it allows municipalities to choose both their "partners" and funding priorities.

Initiatives for Better Co-operation

The state government is currently undertaking improvements to facilitate private investment and strengthen the state's economic competitiveness. Just recently the *Institute for Quality, Innovation and Competitiveness* was created and alongside a strategy for regulatory improvement. Agreement 81 is conspicuous in establishing regulatory improvements, published in May 2006. Similarly, the *Regulatory Impact System* and the *Regulatory Innovation and Improvement Programme* were established in June of that year. Likewise, the *State Register of Procedures and Services* was created in August and a month later an agreements among the municipalities of Merida, Progreso and Tizimín to integrate the *Centre for the Accelerated Creation of Firms* (CARE) was signed.

It is also key improve regulatory qualities regarding the opening and functioning of firms by simplifying paperwork and expediting requirements. In Mexico the Federal Commission for Regulatory Improvements (COFEMER) has supported municipal authorities through the creation of the System for the Accelerated Creation of Firms (SARE), which has eased and expedited the procedures for the creation of new firms. These are already in place in a hundred and six municipalities of nearly every state and can account for the creation of nearly eighty thousand firms representing a twelve billion pesos investment. This last year, Mérida's CARE green-lighted two-hundred and seventy-nine firms representing a forty million peso investment.

The need for greater and better horizontal co-ordination is evident in the case of Yucatán, but initial steps have been taken to improve linkages among administrative branches. One example has been the founding of the *Institute for Quality, Innovation and Competitiveness*. The Institute now coordinates undertakings in its surroundings through fifteen secretariats and state bodies. Up until now all efforts have centred more on improving regulatory issues. Ironically though, regulatory improvement has consisted of regulatory espousal rather than its elimination since in many cases there were no regulations in place. That is why the Institute has created regulation templates that may be adopted by the bodies if they judge convenient. Another function of the Institute has been the training of over 1 600 people including government personnel.

The institutional framework favouring governance and promoting social participation for better resource management has also been improved. The State Programme for Economic Development was set out for a twenty-five year period for the first time. Similarly, various advisory boards such as the *Infrastructure and Social Participation in Public Budget* have been created. However, its impact until now has been limited and action should be taken in order to reinforce these initiatives.

The State Government has sought citizen participation for local planning processes through such mechanisms as the *Infrastructure Council* and the *Budget Council*, which are made up of non-government players. In order to consolidate these institutions and have a larger and more adequate framework of action, an initiative has been sent to the local Congress proposing a new State Planning Law. This law initiative seeks to adopt long-term programmes, besides promoting social participation change. This piece of legislation if approved could also contribute to improve the institutional framework in the state.

Box 3.6 **Horizontal and Vertical Co-ordination in the Mexican Micro-Regions Programme**

The Micro-Regions strategy involves the commitment of 12 Mexican ministries to co-ordinate poverty-reduction efforts in over 260 micro-regions with nearly 100 000 communities and a population close to 20 million. The strategy's main normative instrument is the Principles for Inter-Ministerial Co-operation and Co-ordination signed by the 12 Ministries in May 2001. For implementation, the strategy relies on a multi-tier co-ordination mechanism that involves all three levels of government.

Box 3.6 **Horizontal and Vertical Co-ordination in the Mexican Micro-Regions Programme** *(cont.)*

At the federal level, political co-ordination among different ministries is enforced through the Inter-Sectoral Committee for Micro-Regions, which meets two times a year with the participation of the Ministers and is chaired by the President of Mexico.

At this level, the guidelines of the strategy are discussed and agreed upon. Co-ordination at the federal level is complemented by the role of the pertinent Vice-Ministers that meet at least four times a year in a Normative Working Group to agree upon the projects to be approved. The agenda of the meeting is rotated every six months among the Vice-Ministers. A Technical Committee and an Operative Working Group, where the Director Generals in charge of the strategy meet every month, complete the Normative Working Group. The overall operative co-ordination of the process and of the strategy is the responsibility of a General Co-ordinator within SEDESOL's Vice- Ministry of Social and Human Development.

At the state level, an intermediate or "approval" tier is represented by the Sub-Committee for the Attention of Regions of High Priority (SARP), mainly known in the different states as the COPLADE. The COPLADE is a wide-ranging state development council chaired by the State Governor. At this level, the Unique Programme of Regional Sustainable Development (UPRSD) is drafted and negotiated to constitute the general investment framework for each micro-region. Within the COPLADE structure there is a discussion group for the micro-regions. The co-ordinator of each discussion group is the State Delegate of SEDESOL. Bottom-up demands from the Councils for Regional Sustainable Development (CRDS) are received here either through the SEDESOL representative or through the elected representatives of the CRDS.

At the local level, co-ordination takes place in each Strategic Community Centre (CEC) through periodical meetings of the Council of Regional Sustainable Development, known in the states as COPLADEMUN or as the Committee for Municipal Development. In the cases where the micro-region boundaries exceed the municipal administrative ones – which is often the case – a new figure, the "Micro-Regional Committee" is formed by bringing together each municipality's COPLADEMUN. The aim of this local tier is to articulate a partnership where communal organizations are represented. In different communities it is assumed that interests are not the same, therefore partnerships to find a common ground of interest may articulate through narrow components, where agreement exists: e.g. commodity producers. Through these communitarian assemblies local demands are discussed and given a priority. With the help of the functionaries of SEDESOL, these demands are given the forms of projects and transmitted to the state's COPLADE.

Source: OECD (2003). Placed-Based Policies For Rural Development: The Micro-Regions Strategy, Mexico (Case Study).

Co-operation for a more Effective Planning Process

The strategic planning that has been undertaken in many Latin American cities such as Bogota, Quito, Cordoba, Buenos Aires and Rio de Janeiro, has shown to be a useful tool for good government and for promoting a city model according to regional needs. Other routes that have been pointed out for constructing metropolitan-based competitive strategies are either to inform about the needs and wants of a particular region and the economic potential and incentives it offers. In that sense, ICTs, or even a given city's website can become an extremely important mean of information if properly designed.

It is important that the planning process in Yucatán shifts away from sectors and into regions, as well as from top-down to bottom-up approaches. Planning has traditionally been done – and Yucatan has clearly imitated this practice- sectorally; that is, planned through administrative areas and not territorial ones. As a result, policy objectives are set out with sectors in mind and not with communities in mind. Similarly, planning has been done at the state government with little inputs from the regions and the citizens. However, there are signs that that situation has started to change with new initiatives and institutional arrangements in place.

Co-operation among the different actors should be spurred if plans are ever to influence policy agenda and become a reality. The *Strategic Plan of Mérida* is a citizen's initiative that pools together in its General Assembly thirteen business, academic, social associations and state and municipal representatives. It has undertaken studies on long term projects for transport and the environment. It aims at strengthening the development of Mérida in three service axes: health, education and tourism. Nonetheless, it lacks an institutional framework to link its studies and/or opinions with government work projects, thus limiting its influence and its capacity to bring together separate players.

A Vision for Regional Development

The fundamental challenge for improving regional competitiveness and social cohesion in Yucatán, as voiced by stakeholders in government, the private sector, and civil society, is the lack of a shared, coherent long-term vision for the state. In essence, the preceding policy recommendations form part of a larger strategy to effect a fundamental transformation of policymaking and governance in order to develop a collective vision of the state's future. Ideally, policymakers and government officials should implement the vision of Yucatán's future within the context of a 15 or 20-year plan.

The Yucatán Peninsula

Despite a shared culture and interests, institutional co-operation at the state-level in the Yucatán Peninsula has been hampered for a number of reasons. Each state depends greatly on federal resources and is restricted in their ability to pool and manage such resources collectively. In addition, planning and development projects are closely linked with three and six-year electoral cycles, which are short-term and do not coincide in the three states. Finally, in spite of close ties among the three states, some level of competition exists particularly with respect to economic development activities such as tourism and fishing. Paradoxically, tourism is the one area in which inter-regional co-operation may yield the most obvious economic benefits for Yucatán and neighbouring states.

Several potential opportunities exist for collaboration among the three states that comprise the Yucatán Peninsula. To date, some collaboration has taken place on an informal basis, particularly with respect to resource management and public health issues. According to state government officials, other areas include tourism, fishing, logistics and conservation of natural resources. Another very concrete area is the branding strategy for tourism discussed in chapter 2.

As mentioned earlier, Merida has important advantages not only at state level but also regarding the whole Yucatán peninsula. It has an important urban infrastructure, good health, education, business and commercial services, amongst others. Besides all that, the *Plan Merida* harbours a relevant social initiative in reflecting on the development of the urban area. It is important that the state government and the municipalities in the metropolitan area of Mérida help consolidate the city as a regional centre for education, innovation and health.

The future creation of a Metropolitan Planning Institute, such as exist in other parts of the country, is also highly advisable. Such an institute would allow the upgrading of skills of urban-development personnel and the design of technically sound urban plans. At the same time, it is necessary that the coordination efforts among municipalities in the functional area of Mérida and other urban centres should improve on the basis of making public utilities services more efficient. It should be noted that the municipal governments of the functional area of Mérida have been innovative and have promoted citizen participation schemes, but have not accomplished the integration of public policy networks. Certain municipalities in the country have established diverse councils for city policies that have propelled the interaction of real estate agencies, business and commercial groups, neighbourhood assemblies and academia representatives helping envisage the future for development and competitiveness.

Involving the Private Sector, HEI and Civil society

Although important efforts have been undertaken to customise education and training programmes in state-operated institutions to fit the needs of the production system, it is clear that a major and more systematic effort is required. It is necessary to review the existing agreements and interactive programmes between education institutions and the private sector to further co-operation. The ultimate goal is to increase the chances of students of getting not only a job in the labour market, but also a well-paid one.

Local players are interested in the state's economic development and modernisation. The state Government, entrepreneurial groups, educational institutes, trades unions, alongside political and social groupings are keen on improving the conditions of the state and the region. Nonetheless, institutional workspaces focussed on integrating those needs through direct action among local players are apparently non-existent. There is no institutional public policy regarding development and competitiveness. These spaces should be opened to enable direct action in order to foster the creation pertinent programmes.

Although the state is showing an important summon power, it must take the next step and integrate players in the public policy networks in such a way that they participate in the design, implementation and evaluation of development planning and assume the collective obligations with respect to development and competitiveness. It is true that the Councils for Infrastructure and Social Participation in the Public Budget are clearly headed in this direction. Nevertheless it would seem paramount to widen this trend to encompass other councils to create a single Council in which diverse players would intervene in long-term policy-making. Some states such as Sinaloa, Chihuahua and Nuevo León have managed to take this step and results are beginning to be seen.

Although an initial step has been taken in Yucatán in order to have an inclusive, bottom-up, regionally oriented body to influence policy design and evaluation, the new body needs real leverage and mandate to work as intended. It is also true that the *Council for the Economic Development of Yucatán* an organisation that enables the participation of the productive sector has already been set up, but with no real results. In fact, many private actors that have been shaping the state economy for generations are not included in such Council. It is advisable that a clearer mandate and objectives are given to this Council and that it includes other private actors besides the chambers and sectoral bodies to ensure real leverage when it comes to influencing the policy agenda and evaluating government's performance.

ANNEX

1) PUBLIC ADMINISTRATION IN THE STATE OF YUCATÁN (LIST OF DEPARTMENTS)

AUTONOMOUS POWERS AND BODIES

- LEGISLATIVE BRANCH
- JUDICIAL BRANCH
- STATE COMMISSION FOR HUMAN RIGHTS
- ELECTORAL PROCEDURES AND CITIZEN PARTICIPATION INSTITUTE
- ELECTORAL COURT OF YUCATÁN

EXECUTIVE POWERS

CENTRALISED ADMINISTRATION

- GENERAL STATE DEPARTMENT
- TREASURY DEPARTMENT
- *OFICIALIA MAYOR*
- DEPARTMENT OF BUDGETS AND PLANNING
- DEPARTMENT OF URBAN DEVELOPMENT, PUBLIC WORKS AND HOUSING
- DEPARTMENT OF ECOLOGY
- DEPARTMENT OF HEALTH
- DEPARTMENT OF EDUCATION
- GENERAL COMPTROLLER
- CHAMBERS OF STATE JUSTICE
- DEPARTMENT OF RURAL DEVELOPMENT AND FISHING
- DEPARTMENT OF COMMERCIAL AND INDUSTRIAL DEVELOPMENT
- DEPARTMENT OF ROADS AND PROTECTION
- DEPARTMENT OF TOURISM
- DEPARTMENT OF SOCIAL DEVELOPMENT

THE NUMBER OF EMPLOYEES WITHIN THE CENTRAL SECTOR:

BRANCH OFFICES: 4321

PUBLIC SAFETY: 3326

TOTAL: 7658

State-owned enterprises are overseen by certain central branches, except for one, which is thus described by law:

GOVERNMENT SECTOR

GENERAL STATE DEPARTMENT

- INSTITUTE FOR THE DEVELOPMENT OF MAYAN CULTURE IN YUCATÁN
- INSTITUTE FOR GENDER EQUALITY IN YUCATÁN

ADMINISTRATIVE SECTOR

OFICIALIA MAYOR

- INSTITUTE FOR WORKERS SOCIAL SECURITY OF YUCATÁN

INFRASTRUCTURE SECTOR

DEPARTMENT OF URBAN DEVELOPMENT, PUBLIC WORKS AND HOUSING

- ROADS COMMISSION OF YUCATÁN
- LAND-ZONING COMMISSION OF YUCATÁN
- BUILDING, EQUIPPING, MAINTENANCE AND REHABILITATION OF SCHOOLS OF YUCATÁN INSTITUTE
- DRINKING WATER AND DRAINAGE BOARD OF YUCATÁN
- POWER BOARD OF YUCATÁN
- PUBLIC WORKS COMMISSION OF YUCATÁN

HEALTH SECTOR

DEPARTMENT OF HEALTH

- STATE PUBLIC HEALTH ADMINISTRATION
- HEALTH SERVICES OF YUCATÁN
- FRIENDSHIP HOSPITAL

EDUCATION SECTOR

DEPARTMENT OF EDUCATION

- BACHELOR'S COLLEGE
- TECHNICAL COLLEGE OF YUCATÁN
- SCIENTIFIC AND TECHNOLOGICAL COLLEGE OF YUCATÁN
- ARTS COLLEGE OF YUCATÁN
- INSTITUTE OF CULTURE OF YUCATÁN
- INSTITUTE OF ADULT EDUCATION OF YUCATÁN
- YOUTH INSTITUTE OF YUCATÁN
- SPORTS INSTITUTE OF YUCATÁN
- HIGHER TECHNOLOGICAL INSTITUTE OF MOTUL
- HIGHER TECHNOLOGICAL INSTITUTE OF PROGRESO
- HIGHER TECHNOLOGICAL INSTITUTE OF EASTERN YUCATÁN
- HIGHER TECHNOLOGICAL INSTITUTE OF SOUTHERN YUCATÁN
- METROPOLITAN TECHNOLOGICAL UNIVERSITY
- SOUTHERN REGIONAL TECHNOLOGICAL UNIVERSITY

- ORIENTE UNIVERSITY

INDUSTRIAL AND COMMERCIAL SECTOR

DEPARTMENT OF INDUSTRIAL AND COMMERCIAL DEVELOPMENT

- HANDCRAFT CENTRE OF YUCATÁN
- YUCATÁN INSTITUTE FOR QUALITY, INNOVATION AND COMPETITIVENESS

TOURISM SECTOR

DEPARTMENT OF TOURISM

- CULTURAL AND TOURIST SERVICES PATRONAGE OF YUCATÁN

AGRICULTURE AND FISHERIES SECTOR

DEPARTMENT OF RURAL DEVELOPMENT AND FISHERIES

- STATE FUND FOR POULTRY, PORCINE, AND BOVINE PRODUCERS OF YUCATÁN

SOCIAL DEVELOPMENT SECTOR

DEPARTMENT OF SOCIAL DEVELOPMENT

- INTEGRAL FAMILY DEVELOPMENT SYSTEM OF YUCATÁN

DECENTRALISED ORGANISMS

- STATE INSTITUTE FOR PUBLIC INFORMATION

STATE PARTICIPATION ENTERPRISES

INFRASTRUCTURE SECTOR

DEPARTMENT OF URBAN DEVELOPMENT, PUBLIC WORKS AND HOUSING

- LIGHT POSTS OF YUCATÁN FACTORY, S.A. DE C.V.

TOURISM SECTOR

DEPARTMENT OF TOURISM

- CHICHEN ITZA AIRPORT S.A. DE C.V.

EDUCATION SECTOR

- MEXICAN RADIO INSTITUTE
- TELEYUCATÁN SYSTEM, S.A. DE C.V.
- GRAPHIC WORKSHOPS OF THE SOUTHEAST (IN FORECLOSURE)

GOVERNMENT TRUSTS

GOVERNMENT SECTOR

GENERAL STATE DEPARTMENT

- PUBLIC SAFETY FUND OF YUCATÁN
- TRUST FUND 2002- NATURAL DISASTERS FUND, YUCATÁN

HEALTH SECTOR

DEPARTMENT OF HEALTH

- VOLUNTARY PROMOTERS PATRONAGE OF YUCATÁN
- ADMINISTRATION AND INVESTMENT TRUST FUND FOR THE CONSTRUCTION OF THE REGIONAL HIGHLY SPECIALISED HOSPITAL, MERIDA, YUCATÁN
- STATE HOSPITAL INFRASTRUCTURE TRUST FUND

AGRICULTURE AND FISHERIES SECTOR

DEPARTMENT OF RURAL DEVELOPMENT AND FISHERIES

- SHARED RISK TRUST FUND FOR THE DEVELOPMENT OF AGRICULTURAL BUSINESSES
- AGRICULTURAL DEVELOPMENT FUND OF YUCATÁN
- *YUCATÁN PRODUCE* FOUNDATION
- AGRICULTURAL AND FISHING CREDIT FUND
- MICRO CREDITS FUND OF YUCATÁN

INDUSTRIAL AND COMMERCIAL SECTOR OF YUCATÁN

DEPARTMENT OF INDUSTRIAL AND COMMERCIAL DEVELOPMENT

- INDUSTRIAL SITES TRUST FUND OF YUCATÁN
- SMALL INDUSTRIES GUARANTEE FUND OF YUCATÁN
- PROMOTION AND DEVELOPMENT FUND OF YUCATÁN

TOURISM SECTOR

DEPARTMENT OF TOURISM

- TOURIST PROMOTION TRUST FUND OF YUCATÁN

EDUCATION SECTOR

DEPARTMENT OF EDUCATION

- CHILDREN'S CULTURAL DEVELOPMENT OF YUCATÁN
- MUNICIPAL CULTURAL DEVELOPMENT
- BOOK READING PROMOTION OF YUCATÁN
- STATE FUND FOR CULTURE AND ARTS OF YUCATÁN
- SUPPORT PROGRAMME FOR MUNICIPAL AND COMMUNITY CULTURES OF YUCATÁN
- STRENGTHENING HIGHER EDUCATION IN YUCATÁN FUND
- MIXED FUND FOR THE PROMOTION OF SCIENTIFIC AND TECHNOLOGICAL INVESTIGATION
- IRREVOCABLE TRUST FUND FOR INVESTMENT AND ADMINISTRATION FOR THE EDUCATIONAL TECHNOLOGIES PROGRAMME AND THE MASTERS ON PUBLIC EDUCATION OF YUCATÁN
- EXECUTIVE POWER GOVERNMENT HOUSE OF YUCATÁN

NOTES

[1] Leaving aside the special case of Mexico City (the Federal District) that obtains 46% of its total revenue from own-sources.

[2] Although *Ramo 33* has 6 funds, only two of them –FAIS and FAFM- concern transfers to municipalities.

[3] The formula first calculates a poverty indicator defined as the squared weighted sum of five family poverty satisfactors: income, education, housing, sewage and electricity (called the global poverty index). These indicators are later added up to obtain municipal, state and national poverty indexes (Scott, 2004).

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YUCATÁN, MEXICO

The Mexican state of Yucatán, with its strategically important location near the United States, Central America and the Caribbean, is one of the most dynamic regions in the OECD. Yucatán is also a land of contrasts. It is a lagging but growing region, offering a high quality of life and vast natural resources, yet suffering from problems of sustainability. Its tourism attractions are located in rural areas that do not benefit from them. It has both state and Peninsula medical services, but its health services coverage is uneven. Yucatán is a centre for higher education in the Peninsula, yet its graduates do not find jobs. It has a number of marginalised communities in fragmented administrative bodies, and although the Peninsular states share a common cultural heritage and attractiveness, their institutions do not co-operate.

Clearly, Yucatán is not taking full advantage of its many resources, and in fact, challenges in the region threaten to undermine local assets. Among these is the need to upgrade activities to higher value-added innovation and design processes, and to foster primary activities to reach international markets. While the state government has proposed programmes to spur formalisation of the informal economy, measures such as better regulation, cutting red tape and providing employment opportunities and access to formal credit could have a greater impact. The lack of a shared, coherent long-term vision is a fundamental challenge to improving regional competitiveness and social cohesion in Yucatán. The OECD's recommendations can only be part of a larger strategy to develop a collective vision of the state's future.

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